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MIDDLE AGE HEALTH AND FITNESS

BY
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49 RUPERT STREET
LONDON, W.1

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FOREWORD

WHY fear Middle Age ? It is for the majority the time of success, the period of pleasant accomplishment, the age of fruition. At forty a man is in the Prime of Life, and at fifty he is still well within the age of vitality and splendid endeavour. For women Middle Age brings some ill-health certainly, but that should only be in passing, and for them the years past forty need have no terrors. Girlhood and youth lack many sweet gifts brought by the Fairy of Middle Age : experience brings contentment and added powers of enjoyment. In society, in athletics, in friendship, and in her home the woman of forty-five may still reign as a queen and look forward yet to many years of happy activity. But health and fitness are as essentials to the enjoyment of middle life as of the years of effervescent youth. Nerves and good looks, social charm and athletic success are, indeed, increasingly dependent on physical health as the years go by after forty. It is as a helping hand to keeping well and fit in middle age that this little book is written ; it is a message to the " forties " and the " fifties " to keep up and doing and learn how to discount the weight of years.

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CHAPTER I

BECOMING FORTY—AND AFTER

Middle Life—Forty to Sixty—Primitive Man at Forty—The Prospect of Life—Differences between Twenty and Forty—Elasticity—The Characteristic of Youth—Human Rubber—Trend of Middle Life—The Forties and Fifties—Common Maladies—How to Check them——Health and the Business Man—Indigestion—and its Consequences.

THE spring-time of life may inspire poets and singers with their favourite themes, but in the practical world of everyday experience it is middle age which is seen as the period of splendid endeavour and fruition. Let me explain at once that by middle age I mean the years between forty and sixty, wherein men and women most usually set the seal upon their work and in which they become most established in the hearts and minds of their contemporaries. By forty a man has usually placed his feet firmly on the particular ladder of fortune that he intends to climb ; by forty a woman, although perhaps a little regretful of waning youth, has come into a Kingdom of Love and family devotion, or has established herself in some other realm. To-day

the conditions of life throw a great strain on the majority of men and women in their fifth and sixth decades, but they are, nevertheless, far more favourable to continued health than they were in centuries gone by. Indeed, looking back to the dawn of man's history as an intelligent being, one sees that in early days the summer-time of life must have set in very early, and ended by the late thirties.

There is every reason for supposing that Primitive Man was really old at forty. The hard struggle for existence must have told severely on his not over-massive frame long before that age, whilst the raw and rough meats upon which he largely subsisted played havoc with his teeth even in his thirties; added to this the wounds and injuries of a hundred fights, and one has an accumulation of stresses and strains that almost certainly made the Cave Man's length of years about half our fourscore years and ten. Quite an old man at forty, too weak to fend for himself, and too crippled to withstand the impatient Young Men chafing at authority without power, his fate as the Old Man of the Tribe had long been settled by tradition. Left to starve, knocked on the head, or figuring as the *pièce de résistance* at a great Feast of Succession—just as local custom might be in this place or that—certainly he rarely achieved the dignity of the fifties or sixties. Primitive Man was not only too old at forty, but hopelessly senile by then. Even in the early civilizations—recent times, comparatively speaking—much of the venera-

tion and respect accorded to grey heads was probably due to the difficulty of living long enough for one's hair to lighten in colour. In fact, a tribute to survival. It was a great thing to be grey in the head and still "not out."

According to the progress of civilization, the land of birth, and the lot in which his existence has been cast, man has always become old at a rate proportionate to the hardships of his daily life. In quiet eras where peace and prosperity permitted the development of protected classes men lived to a really ripe old age; when wars, famines and plagues ravished the land, men did not live long and their old age was our middle age: even in mediæval times in England it seems as if many were prematurely aged by forty-five. When daily routine included the swinging of giant swords and the wearing of immensely heavy armour, whilst damp, draughty and ill-lit castles gave rheumatism a perpetual home, the "expectation of life"—as the insurance officials call it—was not very bright as one got into the forties. Again, with plague more or less rampant and sanitation unknown it must have been a hard task to keep really good health even as long as that. The average fit man of fifty to-day is, indeed, a striking contrast to the average man of a few hundred years ago, and who knows that in centuries to come the decades from sixty to eighty may not be the then prime of life! Given a steady improvement of parental tissues, a little more knowledge of how

to keep up strength and nutrition, together with a surer system of beating the ubiquitous microbe in the long struggle of Man versus the Germ, and the thing is by no means impossible.

"Twenty" and "Forty"

Outwardly the contrast between twenty and forty is mainly a matter of bulk and greater dignity: in a clean-shaven time there is certainly not the striking change that was so evident when fashion decried that "twenty" should be a beardless stripling and "forty" a bearded man of action. There is little difficulty—commonly none at all—in recognition by one another of those who parted as students or youthful colleagues and have not met for twenty years. It is *after* forty that the real change in feature, hair and demeanour comes for most of us. Nevertheless, deep down there is all the difference between twenty and forty. It is a difference of physiology that is out of all proportion to the changes in appearance. At twenty the body is not fully knit, nor fully grown: some of the bones not yet completely hardened and are still in part made of gristle. At forty the body is fully developed and the bones thoroughly hardened.

Again, at forty the tissues have lost some of that springiness that characterizes them in youth; the system as a whole is more rigid and cannot respond so quickly to varying stresses and strains, and so it

is that whilst at twenty a sharp run upstairs or a stiff walk up-hill does not present any difficulties, these exercises are not so easy to accomplish without shortness of breath twenty-five years later. The robust-looking man of forty-five or fifty is very often "puffed" after sudden exertion; his actual fitness is much less than his healthy exterior would lead one to suppose, and he has lost far more of elasticity of youth than he should have done by early middle life. After forty, the question of elasticity is one of the most vital things to health, every endeavour should be made to retard the natural tendency to increasing rigidity and to retain suppleness in the tissues as long as possible. Apart from organic disease there is no reason why the man of fifty who keeps himself fit should be unduly distressed because he has to hurry for a train; it is the unfit "puffy" man, whose stomach is overloaded with breakfast that he has given it no time to digest, who gets distressed—even dangerously so—when he has to run for his train in the morning. The practical point being that it is much easier to get into and out of training at twenty than it is at forty; whilst the man of forty-five or fifty who once lets himself get puffy and flabby risks getting into a state of poor health which may become chronic.

The ability of a material to give and yield to stress whilst subsequently regaining its form and position adds enormously to its strength. How strikingly this is seen when a great storm sweeps

the countryside; supple and yielding trees bend to the fury of the gale and when it is over straighten themselves and are unchanged. But whilst the poplar and the graceful fir or pine are thus saved by their elasticity, the brittle unyielding elm is stripped of many a giant limb. He who bends may not break. And so it is with human tissues and all the marvellous mechanisms that go to make up the human body; it is their elasticity almost as much as their inherent vitality that makes for health and fitness.

There is no rubber in our composition, although the ease with which highly trained gymnasts and others assume extreme postures without hurting themselves might well lead us to suppose that some are indeed built on a rubber frame; but we have, nevertheless, a very excellent substitute for rubber in the elastic tissue which is one of the most important constituents of the body. There is a host of elastic fibres in us, and these are collected together into powerful strands and bands just where the strains of daily life are felt the most. And of all the manifold uses to which our human rubber is put, none is more important than its maintenance of elasticity in the great blood-vessels—the arteries—which carry the purified blood from the heart to every part of the system. There is all the difference between a set of rigid unyielding tubes and those that by reason of their elasticity can give without breaking when subject to special stress. The adven-

tures of daily life throw many and varied calls upon the arterial system of the body ; occupation, changes in the weather, variations in diet, spells of prolonged exercise in holiday-time followed by months of sedentary life all challenge the blood-vessels to bear varying burdens and to accommodate themselves to many different kinds of strain. Healthy men and women are able to adjust themselves to all these just by reason of the elasticity of their tissues, and particularly owing to the elasticity of their arteries. But an important condition of their capacity to give and take, to bend without breaking, and to withstand the storms of life without shipwreck is that it is in youth and early adult life that our elastic fibres are most supple ; for many they remain at their best well into middle age and even into advanced life. But it is a fact of experience that for most city dwellers and for those who cannot live much in the open, or freely exercise themselves, the wonderful elasticity of youth lessens after the age of twenty-five years or so, and that certainly after forty they cannot rely on the same margin for reaction as in earlier life. There is no reason why the average man or woman of middle age should not enjoy as much elasticity of tissues as is ever needed for work or play ; but certainly they cannot be sure of maintaining it without some attention to rules of living. Youth is elastic and healthy without effort : middle age is hampered by cares, occupations and ties of all kinds that make it not

always easy to keep elastic and fit without due care. There are few problems of medicine and hygiene more important than this. We want all the knowledge we can obtain as to why the vital elasticity of youth so quickly gives way to rigidity in some, whilst remaining as a gift of the gods with others. We want to know more about the connection between occupation, work and living in cities with premature failure of elasticity ; and how to prevent or remedy the conditions which we already know to be particularly detrimental to our human rubber in middle life.

Fortunately to-day we are in possession of many more facts in this connection than were known even to our grandparents. Whereas they had little to go on in trying to keep fit as years passed, we have much information that can be applied with the very greatest advantage to the problems of middle age health and fitness. One's difficulty often is not so much in understanding why a man's health is failing as in getting him to realize that to-day there really is a science of keeping young whilst growing old ; and that there is not the least necessity for giving in just because signs appear that all is not well with the circulation ; or when shortness of breath, repeated " colds," headaches, bad nights, indigestion and so forth seem to have become part of daily life. So many seem to think that the best way is to let things take their course and trust to luck : a mistaken attitude for which there might have been

some excuse fifty years ago, but not to-day. Others get unduly alarmed, and yet others depressed beyond measure, when told that their "blood-pressure is rather high," that the "heart requires a little help," that "smoking must be reduced," and so forth. The right thing is to regard all these as useful signs of trouble ahead and to make use of modern scientific knowledge not only to remedy the existing malady but to prevent its further development. There is no sadder sight than a man of middle age giving in at the first sign of lessened powers. It is just the care that can be taken when early appearances of middle-age stress show themselves that makes it possible for health to be regained and a happy old age reached.

Trend of Middle Life

Once middle age has been reached, the natural tendency to a lessened springiness of the system and to a general hardening of the tissues is hastened or retarded by the circumstances of the life we lead. It is then a question of individual experience as to whether the muscular system will become set firm, the digestive apparatus flabby, and the circulation poor and untrustworthy, or whether a life of healthy activity shall be still enjoyed with all the advantages that the great strength and firmness of fully matured organs give us. There are some whose daily lives are so ordered as to make for the continu-

ance of vitality and sound health, but these indeed are in the minority : for men the sea and the country-side, the Navy and the Army offer ideal conditions for fitness but for the comparatively few. Women, of course, have only such advantages to a trifling extent. This, of course, in comparison to the lot of the teeming millions who work indoors from one year's end to another ; for this vast majority of the world's workers health and fitness have to be sought at all ages, but particularly is it in *middle* life that a special effort has to be made to maintain the elasticity and tone of mind and body if the best is to be got out of life, if premature breakdown is to be avoided. The sedentary life is dangerous for all, but it has its special risks for those who having achieved a comfortable security in the forties and fifties take the line of least resistance and indulge in the pleasures of the table, of the motor-car and of the fireside *whilst avoiding physical exercise as far as possible.*

It is the business man, the man in the office and at the desk, who needs most to take himself seriously in hand once he has reached the age of forty ; even at forty-five or fifty it is not necessarily too late to mend, but the longer a rational hygiene of life is neglected the more danger there is that weaknesses in the vital defences will have appeared and the more difficult must it be to make them good. For women engaged in pursuits which keep them indoors for the greater part of the day, whilst necessitating

their exposure to all kinds of weather and the discomforts of crowded travelling morning and evening, the call for a careful regulation of life is all the more urgent. Whilst for that large class of workers who not only spend their time within four walls, but have to stand for long hours as well, health is bound to fail and the system sure to age many years sooner than it should do under natural and healthy conditions. Men at the pigeon-hole, at the counter and at the door ; women standing in shops, factories, and elsewhere, all suffer from an enormous strain on tissues already enfeebled and hearts already overburdened by the poor atmosphere and generally unhygienic surroundings in which so many have to work. The remedy lies within themselves, in their initiative and determination so to neutralize the disadvantages of their working conditions that they can keep fit and young in spite of the circumstances which tend to drag them down. One cannot see too many athletic clubs formed for the unemployed in the big shops and offices ; such associations for outdoor games and exercises mean improved health and longer lives of useful activity for thousands, and it may be hoped that, in the future, similar opportunities will be available to millions.

On the other hand, it is a mistake to suppose that the conditions which are particularly adverse to middle-aged people are entirely a matter of social position. The majority of indoor workers have to cope with these disadvantages in spite of

themselves; but there are countless well-to-do persons of both sexes who of their own free-will court the breakdowns of middle age and a premature senility. They take the line of least resistance and sacrifice health and well-being to a false sense of comfort: the more slothful they become the harder is it for them to regain those active habits of mind and body which make for youth and fitness. Affluence too often leads to ill-health. Retirement with a sufficiency of this world's goods is too often followed by early breakdown. As many successful business men rust out as wear out. It is one of the advantages of a professional life that there is not commonly the same desire to get away from work as soon as a competency has been secured.

Middle age should be a time of health, happiness and prosperity, but without the first the second and third are very difficult to achieve—some would say impossible. Middle age is also a time when it is for the majority more and more difficult to live healthily: nevertheless it is a time when strict attention to the rules of keeping fit brings a greater reward than at any other of man's seven stages. We do not want to become hypochondriacs or valetudinarians; there is not the least need for us to become cranks on health matters, but those in middle life owe it to their immediate circle, and especially to their dependents to make a reasonable fitness one of their most constant aims. Not necessarily fitness for a hard outdoor life—that is comparatively

easy—but for carrying on the daily routine of a sedentary life without a lamentably early failure of life's powers. The forties are important because it is in the fifth decade that early processes of decay begin to manifest themselves; it is in the years between forty and fifty that the fires of life may well be stoked anew and that the clock is to be set back if it is ever to be. The fifties are important in that the breaking point is so often reached between fifty and sixty; the healthy sexagenarian has turned one of the more dangerous corners in life's race and may well look forward to many years of fitness and a ripe old age.

Getting into the Fifties

The trend of life, then, makes for certain common ailments where the simple demands of physiology are ignored. Loss of elasticity, slackening of some parts of our framework and hardening of others, cannot go on for long without such a limitation of powers resulting that very definite signs of weakness become displayed. The unnatural life of offices and workrooms which are ill-lit, ill-aired, cannot be lived without overdrafts on the Bank of Health that have to be met sooner or later. There are many who live on from year to year well knowing that risks are being run and resting on a false belief that they can escape the penalty that Nature exacts from all who disobey her laws. But the

time comes when they get a shock : a very heavy bill has been run up and it is presented for payment just when it is least convenient to deal with it.

The race for that extra step in promotion, the pursuit of that additional five thousand pounds, the finishing of this or that task—all these things put before a much-needed rest or a long overdue spell of exercise and fresh air may be, indeed often are, one of those last straws that break the camel's back. The forties are often the time when overdrafts are made on the Bank of Health with all the rashness of the gambler ; just as often the fifties are the period of payment. A reasonable way of life in early middle age makes for health and success at the sign of the half century and favours that ideal of the healthy sexagenarian which every one should aspire to. The breakdowns and collapses of the fifties are even more tragic than those failures of power in youth which are so mysterious to all who do not realize that in a certain proportion of apparently brilliant boys and girls there has not been implanted sufficient vitality to take them far. Later failure, when the difficulties of early years have largely been surmounted, is surely more poignant and regrettable.

There are, indeed, three very common troubles of middle age which express that failure of adjustment between capacity and surroundings which I hope to show can be avoided by common sense aided by science.

They are troubles which certainly do occur at any time of life, but it is a fact that the man of fifty or thereabouts does very often complain of one or all of them : these signs of disturbed balance in health are—

Indigestion ;
impaired circulation ;
sleeplessness.

The practical point about digestive troubles is that the actual discomfort experienced soon after meals is by no means the most important part of the matter : faulty digestion means fermentation under the influence of germ-action, and fermentation means poisoning. The bane of life in the middle period is chronic poisoning from stomach and bowel : overcome this and the problem of how to keep fit is largely solved.

The conditions of business life or an inactive social existence are as unfavourable as they well can be for good digestion : the muscles which make up the walls of those baggy tubes we call stomach and intestines become feeble, flabby and inefficient in unhealthy circumstances, just as do the general muscles of the limbs and body. Similarly, lack of exercise, fatigue of mind or body and want of fresh air are felt by the great digestive glands, which then but poorly perform their function of forming those digestive juices which are essential to the proper internal consumption of any meal.

The very posture of the business man, whose

life may be taken as exhibiting very well those disadvantages against which the man of forty or fifty has to contend, is unfavourable to a satisfactory digestion and an efficient circulation. Seated for many hours at a time with the chest bent forward and so cramped that the proper action of the chest muscles is impeded, there is a daily tendency for breathing to be carried on with the abdomen so that the apices (the peak-like top sections) of the lungs are not properly aerated. Added to this the flabbiness of the abdominal wall, which is thrust out by the attitude assumed at a desk, leads to a general sagging of internal organs and is highly detrimental to the full swing of the circulation. Under such circumstances the heart —which is a muscle needing exercise and freedom like any other muscle or muscular organ—gets slacker and slacker : without becoming necessarily diseased it certainly does its work poorly and in its somewhat tired, hesitating beat, will express that chronic fatigue and want of fitness that one finds gradually pulling down so many men and women who " do not feel well," have " indigestion," and so forth without having very much in the way of actual illness to account for it. The indigestion that so commonly goes with this state of things is the indigestion of the flabby abdomen and the tired stomach : it is one sign of the tired and overburdened system. With it goes that type of " bad night " that one is so often told about. The tired

man goes home in the evening and gives his equally tired internal economy more work than it can do in the form of an unsuitable meal that requires a good deal of digesting. After dinner he is not especially aware of all not being well inside—certainly he would not say he had "indigestion"—and so goes to bed soon to fall asleep. But his hoped-for night of rest is sadly interrupted by nightmare or "jumps" of some kind or another and at 2 or 3 a.m. he finds himself wide awake with varying degrees of discomfort or flatulence. The stomach has done its best but eventually given up its task in despair, and at this point has projected the irritating mass of undigested food into the small intestine with the result that the brain and body generally reverberate to the stress and strain thus set up. The remedy of this state of affairs is not so much in attention to the local calls of the digestive organs as in the attainment of general health and fitness: how far care and discretion as to diet can help when the position is so bad that the stomach and bowel have been definitely weakened, is a matter for special consideration. But the sequence of "Tired man, tired digestion," is simple enough for ready observation and itself calls for common-sense modifications of life and habit.

A Special Word to Women

The general purpose of this book is to point out where premature failure of health is most likely to have its origin in middle life, and to suggest in what directions our natural defences can be strengthened against illness and the activity of the system maintained at its maximum as long as possible; hence I have entered upon little or no discussion of individual diseases as such, and have dealt mainly with those general principles of life and health upon which depends the fitness of the average hard-working man or woman in business or in professional life. It is, therefore, not within the scope of my present writing to describe at any length those special disabilities which trouble women sooner or later after forty years of age; nevertheless, as I have been so particularly asked not to omit this subject altogether, I will give a little message of encouragement to those who may be going through a very difficult time. And the message is just this: "Hold on whilst this natural crisis of life afflicts you. Keep out of your thoughts those many fears and imaginations which so often assail the sufferer from changing life. You are passing through one of the great natural changes: keep reminding yourself *that it is a natural change and not a disease.* Hold on and probably you will pass through a few troublous months into calm

waters without a tenth of the misery that you have been anticipating." Women do fear this time of life very much, and very often they forget it is quite a natural change that is coming to them and that the more difficult stages are quite frequently over very quickly. Headaches, giddiness, flushes of heat, indigestion, nervous excitement or depression and other accompaniments of a profound physiological readjustment are tiresome and bring with them many days of weariness and sense of ill-health; but they will pass comparatively soon. To hold on, not anticipate troubles that are most unlikely to occur, and to refuse to be frightened by bogies created in the imagination of oneself or of one's friends, are safe maxims for all women who are passing through the critical months that come to them in middle life.

CHAPTER II

THE WAY OF UNFITNESS

Chronic Self-poisoning—The Liver—Intestinal Auto-intoxication—and its Results—Various Opinions cited—A poor Circulation—Its Causes—and its Implications—How to Correct—Blood-pressure—Benefits of Exercise—Sir Hermann Weber on the Circulation—The Blood-pressure Bogey—Popular Errors about Blood-pressure—Much Distress caused by Misunderstanding—Gout and Goutiness—Some Features and Peculiarities of Gout—Predisposing Causes—On getting Stout—Obesity bad for Health—A Question of Diet or Heredity—The Question of Weight Reduction—Banting.

NEXT to the natural tendency to lessened elasticity, most of the troubles of men and women over forty-five come from a chronic poisoning of the whole body due to imperfect digestion. How often does one hear people blame their "liver" for feelings of dullness and ill-health? They blame their "livers" when they should blame themselves. Given a fair chance of doing its work the liver is indeed one of the most patient and hard-working organs we have, and it is really marvellous how it does its work as a never-resting waste-destructor

and filter. Dealing all day and all night with a great volume of blood loaded with the products of digestion, good and bad, it rarely gives any trouble of itself, and although liable to be afflicted with certain diseases which may be regarded as the accidents of life, just as is any other part of us, it may be said to do the most work with the least outcry in proportion to its size of all our special "living laboratories." Our internal anatomy is such that all the blood in the body from stomach, small intestine and large intestine must pass directly through the liver, which in addition has to receive a further supply from the spleen and pancreas, organs which, though of vast importance to health and digestion, have not yet achieved popularity. They do their work in the dark and are far more often unruly than the liver, which, nevertheless, is blamed for their shortcomings, having so few of its own.

The fact of the matter is that the majority of middle-aged men and women who work at their desks eat far too much, and throw more work on the digestive apparatus than it can possibly deal with. The organs of digestion do not favour the sedentary life of our cities, which renders them sluggish and loosens their ligaments of support so that they begin to sag down with the abdomen. Under these circumstances they are overcome by the quantities of unsuitable food given them to deal with, and as a result fermentations are set

up which lead to the formation of poisons that are deadly to health and efficiency. *The root of much middle-age unfitness is slow poisoning, and the cause of this poisoning is faulty diet.* The digestive organs are not only allowed to suffer from unhealthy methods of life, but are given more than they can do under the circumstances. And the hard-working liver gets the blame.

Certainly there is now ample evidence that to continued absorption of small doses of noxious substances from the stomach and bowel—a steady poisoning going on day by day, month by month, and year by year—a host of chronic ailments are to be ascribed: including among these that over-formation of fibrous tissue in the heart and blood-vessels which so often causes premature breakdown. Once this starts the natural tendency to lessened electricity becomes hastened a thousand times, and where not corrected the circulation within a few years becomes unable to cope with even the ordinary stresses of a quiet daily life. By now every one has heard the saying that "a man is as old as his arteries"; herein lies the explanation, and it is self-poisoning of the kind just indicated that is responsible for the beginnings of arterial failure—arterio-sclerosis—time after time.

In an interesting booklet on ways of disinfecting the digestive apparatus as a whole, so that harmful germ-action therein shall be overcome, Captain Ainslie Walker, R.A.M.C., quotes some opinions

of investigators working widely apart from each other as to the prevalent consequences of poisoning from this source. In writings on this subject a variety of terms expressing the same idea are met with, but perhaps the most widely used is that of "auto-intoxication," a convenient but rather clumsy way of saying "self-poisoning." "Alimentary toxæmia," "intestinal putrefaction," "intestinal sepsis," "gastro-intestinal infection" or "fermentation" and so forth are all used to indicate those processes—so very common in middle life—by which inefficient digestion and sluggish bowel action lead to the multiplication of a host of germs in the digestive tubes and to the poisoning and disorders which result from the absorption of their products with the blood. Referring to the importance of this aspect of ill-health, he aptly remarks :—

"Recent researches have emphasized as never before the wide variety of human ills that are directly attributable to intestinal infection. Thus, the splendid work of Sir William Arbuthnot Lane and others has shown the direct relation between bacterial processes in the intestinal canal and such ailments as gout, rheumatism, nervous and mental diseases, numerous skin affections, certain joint disorders, neurasthenia, chorea, vaso-motor and cardiac derangements, nephritis, arterio-sclerosis, diarrhœa, dysentery, and countless functional diseases" (Ainslie Walker's *Auto-intoxication*).

Whilst Dr. R. Tanner Hewlett, Professor of Bacteriology at King's College, London, in an interesting foreword to the above gives the very definite opinion that :—

"The morbid effects of alimentary toxæmia are very varied, ranging from slight departures from normal health to serious diseases such as arterio-sclerosis, renal disease, exophthalmic goitre, and intestinal sepsis requiring operation."

Two other references [1] to the work of American doctors in this connection are also of interest, that of Dr. Beveridge, who has stated that "The reason why women are so much more liable to muscular and joint rheumatism than men is because, suffering greatly from intestinal putrefaction, they contract alimentary toxæmia, their system becomes charged with chemical poisons, and in many instances rheumatoid arthritis is the result." And the opinion of Dr. Bishop, who has especially studied auto-intoxication in relation to the circulation: "I believe the vast majority of cases, as they occur in adult life, are due to the indirect influence of intestinal putrefaction upon the blood-vessels and nervous tissue."

Undoubtedly no problem of middle age is more vital than that of self-poisoning (auto-intoxication), and few things aid health and fitness so materially as the removal of all sources of such poisoning whether from teeth, throat, stomach, or intestinal tract.

[1] *Ibid.*

The Circulation

A poor circulation is a very common source of unfitness in middle life, and nothing makes a man or woman so irritable, depressed and out of sorts generally as sluggishness of the vital currents of the body. It is a case of "blue brains," as well as blue toes and fingers. Faulty habits and a mistaken way of life are here largely to blame once more. Given ample exercise and good fresh air, without any particular stresses and strains, the circulatory apparatus works well enough, but it is indeed sensitive to neglect. The man of fifty who suddenly realizes that his health and energies are failing and begins to take unaccustomed exercise quickly finds himself pulled up by shortness of breath and a very uncomfortable pumping sensation—palpitation—in his chest; his heart is sound, but like the rest of his muscles has become flabby from want of a natural incentive to robust action. Added to this it is probably impeded by that rigidity of the chest which, as already noted, occurs in those who sit at desks for many hours a day; whilst yet again slow poisoning from a sluggish digestive system may add to its burdens. Such a heart is in no danger of stopping; it is not diseased. That is not the point at all. But it is certainly not going to oblige its possessor with a special effort when suddenly called upon: certainly not without showing by its pumpings and

palpitations that it strongly objects to being thus stirred out of its habitual slackness. Fortunately our hearts can be trained and strengthened by exercise just as can any other muscular structures, and it is really wonderful how the unfit in middle life can train their hearts to do good work once more and be ready again for emergency calls. The process of training is one of graduated exercise for the body generally; by walking a little more each day, adding cycling to walking, and then perhaps a little running, not only is the whole body benefited, but the heart is made to beat more strongly and steadily and the circulation is greatly benefited. But the rule must be to make haste slowly: to attempt too much and to go too quickly is a risky process. It must be remembered that just as the sedentary life leads to the laying down of masses of fat, as in the abdomen, so it not infrequently happens that some of this superfluous fat is deposited round about the heart. This is *not*, of course, fatty disease of the heart itself, but is something of an added burden which the heart has to bear in its rhythmic movements. Properly graduated exercise may be relied on to reduce this load of fat just as it lessens the accumulations of fat everywhere. This is an important point to bear in mind when the improvement of a poor circulation in a stout middle-aged person is under consideration.

But the heart is by no means the only factor

in keeping up the circulation, although it is vitally important as the active pump that keeps the blood on the move: its steady rhythmical beat of some seventy-two beats a minute is the driving force that sends the blood-stream along, but it would not be able to maintain much pressure in the vessels were they not constructed so as to have an elastic give and take in their walls. Pressure is vital to the proper maintenance of the exchanges which are carried out in all parts of the body, for keeping up the activities of the brain and the warmth of the extremities: it must not be too low or there will be failure of activity everywhere; on the other hand, if it is too high it defeats the ends for which it has been originated. Here again comes in that factor of elasticity of which much has been said already: with young and healthy blood-vessels there is ready response to all the demands of the life and the circulation is well kept up in spite of many adverse circumstances; in middle age there is not quite the same elasticity, and hence the response to effort is not quite so ready. When there is added the disadvantages of general unfitness and flabby tissues the pressure is abnormal and in its attempts to readjust the matter and keep the blood pressure from falling too low, the system often overreaches itself and sets up a persistent strain that sends the pressure up too high.

At this point, if relief is not given—particularly when the arteries have already commenced to

thicken and harden unduly—a chronic state of weakness may be initiated, leading ultimately to a really serious state of affairs.

All observers are agreed that the best way of combating a weakening circulation is by exercise. The impaired circulation of middle life is *not* to be met with a policy of inaction : no good will be done by assuming the rôle of invalid and spending life in an armchair by the fire. Exercise—moderate and regular—is the keynote to improvement. Of course it must not be pushed to the extent of distress or exhaustion, but with these common-sense provisions muscular exercise may—or rather should—be freely enjoyed. Referring to men who in the late fifties tend to become lethargic and inactive through want of " snap " in their circulations, the late Dr. Oliver advised as much regular, moderate and equable exercise as possible. " Walking is the best of all exercises, but, unfortunately, even when indulged in quite moderately, these patients frequently complain of early ' flagging.' Then in suitable cases gentle cycling on roads of low gradients and with a low-geared cycle is preferable, or horse-riding—a form of exercise which we are apt to overlook in this mechanical age. All sudden forms of exertion should be avoided."

His note of warning against foolish excess, on the other hand, may also well be quoted here : " Many men over sixty years of age, who have led sedentary lives, on retiring from business are apt

to adopt the ways and games of young men, and, being unconscious of the fact that they had already used up much of their endowment of rubber in their arteries, are apt to come to grief" : advice that applies quite well to many still in their fifties.

Sir Hermann Weber wrote : "The healthy condition of the heart and blood-vessels, which is necessary for maintaining the nutrition of the organs and tissues, is effected by keeping them in constant action. A certain amount of action is inherent to them without any effort of the will. This amount of inherent action varies considerably in different individuals. In some constitutions the system of circulation, and through it the health of the organs, remains satisfactory during a long life without any special stimulus ; but in the majority it is apt to decay at a more or less early period of life." This, it will be noted, is a rather pessimistic opinion about the majority, but undoubtedly we can qualify it by the statement that he who takes care can contract out of that category. Arterial trouble is so truly the enemy to a healthy middle age that it is not unnatural for writers to over-emphasize rather than understate the need for its prevention. The great mistake has been that the public have been left in ignorance of such a vital point in health and well-being. Only by knowledge and a proper method of living, together with a suitable dietary, can it be made possible for people to minimize or to avoid threats

to their welfare levelled at them by heredity, bad upbringing, alcohol, self-poisoning and other malady. It is in middle age that the great battle for arterial betterment and an efficient circulation has to be fought.

Blood-pressure

I now come to a factor in health which at all times is important, but particularly so in the fifties, and this is the pressure of the blood-stream as it flows through the arteries of the body. So much has been said lately on this subject for the layman that I feel it just as well to deal with the matter openly, and set down just those facts about blood-pressure which those in middle life can know with advantage whilst trying to strip the term itself of those terrors with which it is sometimes associated. It is true that during the past fifteen years or so the importance of blood-pressure has been so emphasized by doctors in their daily work that it is nowadays quite familiar to the general reader; still, by no means has enough been written about it to put the matter in its right light. Moreover, as it has so commonly been the *ill consequences of abnormal blood-pressure* which have raised the subject at all as a matter of family interest, so it is that the expression not unusually rouses feelings of apprehension. People know something but not nearly enough about the significance of the pressure

of the blood in the blood-vessels; there is a tendency to regard it as inevitably something denoting ill-health and premature breakdown. I have been told quite seriously and more than once or twice that so-and-so "suffered from blood-pressure," as if the thing itself were a disease. Many are frankly alarmed as soon as it is mentioned and await the result of a simple examination to determine its measurement in considerable trepidation.

Let us get to understand this problem of blood-pressure a little more clearly and divest it of its mysteries; then it will be seen that the average man need no more fear his blood-pressure than he need be alarmed about his breathing or his digestion or any other function under ordinary circumstances. *Blood-pressure is not a disease:* it is a necessary condition of the fact that our circulation depends on a very active pump (the heart) driving a vital fluid (the blood) along a closed system of tubes (the blood-vessels). Without some sort of pressure being kept up there would be no circulation: no more than there would be in the water pipes of our houses were there no driving forces pressing it on. In the human body indeed there is a much finer mechanism for adjustment of pressure than in our household pipes, which are rigid and have no give and take: the blood-vessels are so elastic that there is considerable give and take and we can experience quite extensive variations of blood-pressure without anything serious happening. *A*

good pressure in our arteries is vital to good spirits and good health.

What, then, is the blood-pressure bogey that makes some of us shudder at the very mention of this subject? It is a false conception of a simple physiological problem, and arises from a persistent contemplation of the abnormal rather than the normal. The measurement of blood-pressure is readily effected by a simple form of pressure-gauge which is familiar to nearly every one who has ever sought a doctor's opinion in general health matters. To record it occasionally is useful in estimating fitness, just as the recording of one's weight or one's temperature when there seems sufficient reason. There are some who fear the weighing machine because they have entirely mistaken notions about the value of a pound or two here or there; but there are more who are really terrified by the blood-pressure apparatus. In middle age it is important to know how we stand as regards "B.P."—which is the symbol the doctor usually puts in his notebook—for any wide variation outside certain limits gives an indication that health is not what it should be, and enables suitable precautions to be taken to take stress off the heart and circulation and so to prevent a premature ageing and breakdown of the whole system. But let it be understood that there has to be considerable disorder locally and advanced arterial disease with an exceedingly high blood-pressure straining the

vessel walls before such catastrophes as "bursting of a blood-vessel," "apoplexy" and so forth are likely to result. There are hundreds, probably thousands, of persons making themselves miserable over the fear of such possible disasters because they have been told that their "blood-pressure is too high" and that in consequence they must take care. Let us have sanity and balance in all things, but certainly in regard to this blood-pressure bogey. The old and now familiar saying already quoted that a man is as old as his arteries, is true enough, but that does not mean that he is lost and done for as soon as his blood-pressure rises a little or his arteries tighten up somewhat. By no means. Indeed it should be more widely appreciated as a blessing rather than as a curse that we can make fine estimations of blood-pressure and so forestall serious developments in a way that was not possible to the physicians of a generation or so ago.

As to the figures recorded by the sphygmomanometer—to give the blood-pressure gauge its technical name—I think it is unwise for the individual to inquire as to what they may be; for he has not the necessary equipment to estimate the importance of any particular measurement and will more likely become needlessly alarmed than relieved by making a note of the figure. This mainly because he will for certain meet a friend who "knows all about it," and will base the most alarming forecast on the measurement given. Probably he will be to the fore

with a reminder of the fate of "poor old so-and-so," being entirely ignorant of the factors which really decided "poor old so-and-so's" breakdown.

Blood-pressure is one of those factors in health which must be taken on faith and left to the doctor: the layman is quite unable to act for himself in the matter, and having put his trust in his medical man should carry on as advised and think as little about it as possible. He should concentrate on what he can do to keep fit, and not on the possible consequences of any passing or more serious unfitness.

Gout and Goutiness

For many, middle age brings with it gout and all the discomforts of goutiness; essentially accompaniments of the middle period of life gouty maladies are responsible for a great deal of unfitness that prematurely cripples many men and women of active mind and habit once they have got well into their forties. Commonly the first attack of gout occurs somewhere between thirty-five and fifty years of age. It is not, however, those seizures of certain joints—notably the great toe—which makes this such an important disorder at any time; indeed, these acute joint attacks may be regarded rather as safety vents through which much poisoning is thrown out. It is the insidious workings of gout upon the heart and blood-vessels as upon the internal economy generally that makes it such

a serious enemy to fitness and enables it so much to threaten the advent of a hearty old age. Much bad temper, many cases of indigestion, numerous instances of eczema and other skin disturbance may all be traced to gout in the system ; whilst time and again giddiness, deafness, defective teeth and anæmia, premature greyness, chronic headache, sciatica, neuritis, and a host of other ailments owe their origin to the same source. Space will not permit a full account of this mysterious and interesting malady, which was as familiar to the ancients as it is to us to-day.

Let us note in passing, however, that it is a family malady, and that whilst to belong to a gouty family is to be a strong candidate for goutiness, those whose connections have not so far manifested this trouble may rest in peace ; it is unlikely—although not entirely impossible—that they will wake in the watches of some night feeling as if a great toe has been seized in a fiery vice. Surely there are those amongst us who will certainly attain the distinction of founding a gouty family, but the chances as regards any particular individual having this thrust upon him are really quite small. Even in gouty families one has to recognize the curious fact that many of the women themselves escape, although not transferring their own immunity to their children. Thus old Mr. X who dies full of years and gout may leave all his possessions to an only daughter excepting his gout ; this he transfers

as a special legacy to his grandson. The fact that the daughter of gouty parents herself escapes the family scourge is no guarantee that her sons will not be as rich in goutiness as were their grandparents. Undoubtedly the essential causes of gout in those predisposed to it are heavy meat and strong drinks. In anyone of full habit too much consumption of heavy meats and too great a reliance on fermented liquors may set up gout; but where the soil is ready indulgence in either may not have to be very great before an attack is provoked. Certainly it is not to be supposed that a gouty toe is necessarily a sign of intemperance. Far from it. Although gout has been well described as a nemesis of high living, it is equally true that the dietetic habits of the gouty are commonly well within the bounds of normal living. That is not to say *moderate* living, for no nation that habitually serves up meat three times a day for meals can be accused of moderation in diet. Again, one does not so much find gout in steady drinkers as in those who take fermented liquors not in excess but as the usual accompaniments of lunch and dinner. "Gout is but rarely found among drunkards, topers, and loafing beer-swillers; nor is it a special concomitant of cirrhosis of the liver, nor of other organic tissue-changes due to alcoholism. Gout is rather an incident of the legitimate dietetic use of alcoholic beverages. Persons who acquire gout as a consequence of their dietetic habits are, as a rule, above

reproach in regard to their sobriety ; but at the same time, it cannot be gainsaid that their scale of living is habitually high, and that they are of the number of those who fare sumptuously every day."[1]

Alcohol and Gout

On the other hand, alcoholic drinks vary greatly in their gout-giving properties, and this not entirely a matter of the relative quantities of pure alcohol they contain ; it is, indeed, all to do with the question of fermentation and richness. For practical purposes we can divide them into four groups, of which the first and most guilty will include port wine, burgundy and sherry ; whilst stout and strong ales make up the second. Next to these in order of gout-giving propensities may be grouped together champagne and claret ; whilst last of all we can put together spirits and light ales, which, although they may help to bring out the gout, are usually not very blameworthy in this respect. It is interesting to note, as indeed might be deduced from this list of comparative values, that there is less gout in Scotland than in England, malted liquors being much more popular in the latter country than whisky, which is the more favourite drink in the former.

Those who have a tendency to gout, therefore, and would avoid its pains and penalties, must face the fact that in less meat consumption and abstinence

[1] Cf. Allbutt and Rolleston's *System of Medicine*, vol. iii., p. 126.

from beer, wines, and spirits, lies their best hope of so doing. No less an authority than the late Sir Archibald Garrod expressed the opinion that had mankind never fallen victim to the fascinations of the vine we should not have been visited with the afflictions of gout. He wrote: "There is no truth in medicine better established than the fact that the use of fermented liquors is the most powerful of all the predisposing causes of gout; nay, so powerful that it may be a question whether gout would ever have been known to mankind had such beverages not been indulged in."

Dr. Milner Fothergill, a wise old physician of the last century, has left some good sayings about gout which are as applicable to-day as they were half a century ago. Thus: "Perhaps nowhere is gout more inclined to leave its impress, physically, than upon the nails; and, psychically, upon the temper. A fit of gout is a fit of irascibility, and, as Sydenham found, of low spirits and depression. The famous Chatham was melancholic for two years with the gout, and recovered after an attack of gout in the extremities. Some uric acid circulating in the blood has been the initial cause of world-wide changes, it has been speculated. Next morning, after a good dinner, a gouty man is anxious about his property, his tenants are falling behind with their rents; his wife's health causes him the greatest uneasiness; whilst his eldest son's conduct is driving him to despair. After a blue-pill at night

and a Seidlitz powder next morning, the outlook is rosier. He has one of the finest estates in the county, with first-class tenants upon it; his wife is hale and in good health; while his eldest son is a young man of excellent promise, whose crop of wild oats is not going to be at all a lush one. And this altered state of mind is all brought about by getting rid of the excess of uric acid which so profoundly affected the mind, acting like a mental poison. *Mens sana in corpore sano!* If cholæmia produces depression as its leading toxic action, certainly lithæmia finds its expression in a fierce temper. Some of the ruthless deeds of William the Conqueror in his later days suggest gout-poison disturbing his brain. An irate savage mood would beget uric acid in a man of his temperament. So, no doubt, did his gout exercise an unfortunate and malign effect upon 'bluff King Hal' in his later days. Elsewhere I have written, 'It is no more possible to have the brain working smoothly when the blood circulating through it is laden with gout-poison than a man can have an elastic tread with a gouty foot.' The brain, as 'the organ of mind,' is influenced by systemic conditions like any other viscus.'' [1]

On Getting Stout

It is curious how weight increases steadily without

[1] *Diseases of Sedentary and Advanced Life.* By Milner Fothergill, M.D., pp. 189–190.

being noticed. Stealthily pound is added to pound and stone to stone until one day attention is suddenly called to the fact that the bounds of average weight have been passed and the bogey of obesity is in view. Perhaps it is a visit to the tailor, or a chance meeting with a friend not seen for some time ; maybe it is the sight of oneself in a strange looking-glass and a view of one's figure from a new angle that gives pause for thought and reveals the unwelcome fact that aldermanic presence and proportions have taken the place of our once slender and athletic form. Still, it is always better to be stout than to be thin. If one has got to err on one side or the other during the period of middle life let it be with a few pounds—even a stone—to the good rather than to the bad, unless such ambitions for lithe activity and scheming thought as possess so many to-day are to be encouraged and fulfilled. In middle life the fat man certainly has a better time on the whole than his thin brothers ; but the thin woman is better off at forty—as at fifty—than her very stout sisters.

" A family tendency to obesity is well recognized ; but the several members of such a family may not all become subjects of it. Mode of life has much to do in determining the occurrence of obesity, and thus singular unlikeness may exist amongst the individuals of a disposed stock. Such a tendency may be noted in certain members of a family inheriting the arthritic diathesis (tendency to joint

troubles), gout or glycusuria (a sign of diabetes), for example, occurring in some members, and an extraordinary obesity in others. . . . As pointed out by Sir James Paget, after the age of forty years persons either diverge into spareness, or become more or less obese ; the former, as a rule, enjoy the happier and longer lease of life. With advancing years, however, a good deal of the adventitious obesity of middle life is apt to be absorbed and disappear. Heredity apart, the conditions which determine obesity in a morbid degree are diet, exercise, and habits of life. In cases presenting a strong hereditary tendency to fatty hypertrophy (enlargement), habits of diet count far less, and the proclivity may be little influenced by measures which prove effective in other cases."[1]

It is not being fat, but the goutiness that goes with it, that is such a nuisance and handicap to so many whose weight is registered in the "teens." Except where it is extreme, and that is rather a matter of individual health, comfort and requirement than of actual weight, men are unwise to attempt a reduction of more than a few pounds. It is quite possible to reduce weight, and that with considerable rapidity, but to do so opens the way to persistent ill-health. On the other hand, women may well attempt a considerable reduction of weight with great advantage. It is undesirable in every

[1] Cf. Allbutt and Rolleston's *System of Medicine*, p. 493.

way for a woman to let her weight keep up to fifteen or eighteen stone, and especially at a time of life when she has inevitably to face a period of considerable strain and debility. Very stout women feel themselves—and rightly—at a considerable disadvantage both socially and as to health : they are quite right to endeavour to obtain some relief. But even with women I must utter a word of warning where it is a fact that obesity runs in the family, for but little reduction should be attempted where this is the case. Where stoutness runs in families it is very difficult to keep individuals down to average weight; moreover, it is definitely dangerous to their well-being to attempt any rapid reduction of more than, say, ten pounds at the most. Nearly always with great bulk of body lack of adequate exercise has resulted in a good deal of " water-logging " in the tissues : thus there is much superficial swelling due to poor circulation and sluggish tissues. This surface swelling can often be lessened without difficulty and a notable decrease in the size of limbs, for example, may be achieved by suitable means without however much loss of weight occurring. Still, it must not be overlooked that such local reduction in size not only is all to the good as regards general health, but is further greatly welcomed by women who are handicapped by vast bulk of body or limbs.

Two Very Fat Men

There was a very fat man named George Cheyne who, to the great admiration of his contemporaries, actually reduced himself to a normal weight after having scaled no less than 32 stones (448 lb.). Cheyne made a careful study of his health, and came to a number of conclusions about obesity and diet which he embodied in a little book. Many of his sayings are not without interest to-day, such as that in which he emphasized the fact that in middle age most of us eat far too much; he wrote: "Every wise man after fifty ought to begin and lessen at least the quantity of his Aliment, and if he would continue free from great and dangerous distempers and preserve his Senses and Faculties clear to the last, he ought every seven years to go on abating gradually and sensibly, . . . even into a Child's Diet." [1] Cheyne was, of course, nothing like so fat as the famous Daniel Lambert, who weighed 32 stones at twenty-three years of age, and scaled another 20 stones in later life!

Exercise in fresh air is Nature's method of curing over-stoutness. It is not so much a matter of what is consumed in the way of food and drink as of being able to deal efficiently with it by digestion, absorption and elimination. Many stout persons are quite small eaters. Some complain that the less

[1] Quoted by the late Sir William Osler, M.D. Cf. *The Principles and Practice of Medicine* (8th Ed.), p. 451.

they eat the fatter they become. Up to a point they are quite right, too. It is inactivity of digestion and incomplete using up of food substances that leads to accumulation of fat. To put it briefly, the food we eat has to be "burnt up" in the body and its nutriment extracted: in this process a good deal of fat is usually formed at a half-way stage, being then subsequently broken up. But if "metabolism"—as physiologists call it—is poor, then this fat is *not* got rid of and accumulates.

Alcohol makes for stoutness because it tends after a time, or in excess, to clog the combustion furnaces of the body so that the food factory stops work at the half-way fat stage. I am not a believer in making life uncomfortable by ordering strict diet for very stout persons unless there is some urgent need for weight-reduction. If health is good it is better to rely on exercise, with a weekly Turkish bath, than to bant; an occasional course of light baths or massage helps by keeping the tissues toned up. A variety of special diets have indeed been worked out for reducing weight, but such can only be followed with some risk to general health. How does it benefit a man or woman to lose three or four stones in weight and to invalid himself or herself at the same time?

This word of warning is supported by the following injunction to the careful practitioner against "the futility of treating obese persons by any uniform method. In these cases, as in all cases of disease,

regard must be had to the individual and to the personal factors present; and the particular nature of the obesity must be accurately discriminated before any therapeutic measures are attempted. . . . Without doubt much harm may be done if a hard and fast line of treatment be indifferently instituted. In this way it is that patients, to reduce their obesity, are sometimes set to pursue dietetic and other measures which may prove not only unavailing but positively mischievous; and others venture to carry out vaunted methods on their own responsibility, not seldom with risks to their general health, which, if unrecognized, are none the less grave." [1]

An interesting note about banting occurs in Mr. Fitzroy Gardner's entertaining book of reminiscences. He says, and quite rightly, that "few of those who can recall the craze for the process of 'banting' (now a dictionary word) as a means of reducing flesh, know that it derived its designation from Mr. Banting, the fashionable undertaker, who, weighing considerably over 20 stones, invented the system for his own benefit, and then published his experience and details of his system." [2]

[1] Cf. Allbutt and Rolleston's *System of Medicine*, p. 493.

[2] *Days and Ways of an Old Bohemian*, by Fitzroy Gardner (John Murray), p. 84.

CHAPTER III

CHILLS AND CATARRHS

The Common Cold—A Serious Malady—What is a Chill ?—Germs of Catarrh—The " Influenzal Cold "—Responsibility to the Community—Prevention of " Cold Epidemics "—Health in Winter—Household Hygiene—Bronchitis—Clothing for those susceptible to Chills—On going Abroad—Asthma—Evil Effects of Fog.

THE common cold is responsible for many breakdowns in middle life ; by weakening the defences it opens the way to a variety of germs that are always with us and always waiting for an opportunity to attack. Even in the noses and throats of quite healthy persons there are often present a host of microbes of the kind that act as bringers of catarrh when conditions are favourable to their baneful activities. To understand the nature of a " severe cold " or " feverish chill " is to grasp the main principles of that problem of " Man versus the Germ " that is always with us, and is the cause of so many of our health troubles.

The old idea was that a " cold " was due solely to the disturbances resulting from a chill of the body ;

hence the equally familiar and alternative expressions of "catching cold" or "contracting a chill." To-day we know that however much one is chilled, the feverish illness that follows is due to germs; that without these latter it will not occur. Being exposed to a bitter easterly wind or sleeping in a cold damp room affects us only in so far as we are not properly protected by our natural processes for keeping warm, or by insufficient clothing; if the vitality happens to be rather low, or we have really put on insufficient garments for the weather, then the cooling of the body lowers its natural resistance below the point at which it can keep order against the germs commonly present in the dust and air of crowded places. The chilling opens the defences: the germs cause the cold. An interesting illustration of this has been noted in the records of Arctic explorers who have found on occasions that even in very cold and exposed regions they have managed to keep free from "influenza" and "bad colds" until they have opened packages that had been stored away since leaving port; the dust thus set free is almost certain to contain the common microbes of catarrh: hence the colds. There is no doubt that in the country or by the sea one often escapes a cold after being chilled when one would not do so in town: the more germ-free air of the open country or seaside does not always contain the essential factors for "catching cold."

When there is a general prevalence of "colds" it is all the more difficult to escape infection, for on a day when tired and out of sorts the body gets chilled we are likely to fall a victim to the myriads of microbes that are being projected into the air around by sneezing and coughing people, even should we not be harbouring a contingent of active organisms in our own throats at the time. The germs which are so troublesome in this matter always seem to hunt together, although varying greatly in the proportions that they bear to each other in any particular brand of infection. There are, for example, innumerable "streptococci," the "micrococcus catarrhalis"—bearing a suggestive name—and the "bacillus influenzæ"; whilst with them quite commonly goes that dangerous "pneumococcus" which, if it gets into the lungs, sets up pneumonia. All these work in the same way once they get a footing in the lining membrane of the nose and throat; they produce irritation and swelling locally and, at the same time manufacture poisons which are absorbed into the system. The danger of the common cold or chill lies in these poisons, which vary greatly in intensity according to the nature and activity of the germs present; always they are seriously depressing to the heart and circulation, hence the faintness that not infrequently occurs at the outset of an acute catarrh or when the sufferer insists on keeping up and about in

spite of feeling very ill. Likewise these poisons are responsible for the headache, sense of fatigue and feverishness that always accompany "colds" of any severity. From the scientific point of view all "colds," "chills," "feverish catarrhs" and so-called "influenzal colds" must be considered as identical in the present state of our knowledge of the mixtures of germs causing them. Influenza proper is, apparently, a separate malady: the influenza germ is often at work in many catarrhs of nose and throat from very mild to very severe. Certainly the term "influenzal cold" is unscientific and misleading. All colds should be treated seriously, especially when the vitality and ready elasticity of youth is passing or has passed: to differentiate between a "mild chill" and a "severe influenzal cold," as is often done, is to run a risk through underestimating possibilities in the first instance. The man of forty-five or fifty who neglects a cold is overlooking the fact that, however strong he may be, he is no longer capable of the quick reactions of twenty years previously; he forgets—or perhaps does not understand—that his heart has to cope with poisons which may be very virulent and may have all its work cut out to keep the circulation going at such a pitch that further complications may be avoided.

Once the circulation fails and general vitality is lowered beyond a certain level, then any weak

points in the system may be assailed by the invading germs and really disastrous consequences ensue. Astonishment is often expressed at the serious results of a "cold" in particular instances just because this depressing effect on heart and circulation is not properly understood.

A cold in the head or on the chest should never be treated as a trivial malady not worth bothering about.

It follows from this, of course, that a far greater responsibility rests on the individual when colds are prevalent than is generally admitted; but the robust youth who well succeeds in fighting his cold will be disseminating the germs of an illness that may prove disastrous and even fatal to a man or woman of mature years. In winter-time those who work or live in cities are usually a "little below par," as the saying is: they are more open to "chills" and less able to resist the germs which occasion them than in warmer weather and brighter days; hence a more definite code of honourable observance in the matter of "catching cold" would be a great blessing.

Were every one to stay indoors for two days as soon as sore throat, headache, sneezing and feverishness proclaim the onset of a "cold," London —or any other big centre of population—would benefit immensely. At present, when every one considers himself free to infect his neighbour, "colds," so-called "influenzal chills" and acute

catarrhal inflammations of all kinds spread with lightning-like rapidity, and epidemic after epidemic sweeps over us every year. We shall never solve the problem of keeping up health and fitness in winter-time—especially for the aged and weakly—until we get a better understanding of this question of catarrhs. It should be made a rule in every household to see this class of malady in its true light as acute inflammation of the nose and throat due to a group of malevolent germs that is always with us; and, further, to understand that although producing a mild disorder in one person, the same mixture—or "mixed infection," as it is technically called—may lead to a serious illness in another. Acute bronchitis, pneumonia, and heart-weakness are far more frequently results of "catching" some one's "cold" than is generally realized. Hence it should be made a point of honour in the family to keep from taking cold as far as possible, and should one become infected to take every precaution to prevent its spread to others. It is, again, wise to keep rooms so warmed and ordered that the chance of chill is reduced to a minimum, particularly in the early morning, when to enter a public conveyance with lowered vitality is to court every germ that happens to be about; also to keep in temporary isolation any who may start sneezing and "run temperatures" in spite of all precautions, and to send for the doctor if any

"sore throat" or "catarrh" seems to be getting out of hand, especially if it shows signs of "getting on the chest."

Health in Winter

This raises the whole question of health in winter-time when vitality is at its lowest, and those who particularly need exercise and fresh air find it more and more difficult to get away from the office, the study, or the fireside. At twenty-five the elements are braved with much more keenness than at forty-five: the comforts of the home circle are more alluring to a man of fifty than a walk on a dull winter's evening. And so it is that there needs to be a more systematic campaign for keeping fit in the dull months than is carried on in most households. As winter closes in there is a general lowering of vitality, which reacts on children as well as parents, and its correction is a real need which has to be met. The woman of the house has, perhaps, an unduly large share of responsibility as to this, for it is her task to see that the ordering of daily domestic routine is such as to make for good health and spirits in all who seek the shelter of her roof as evening falls. There is her husband, who is the chief bread-winner, and perhaps one or two adult children making their early way into the world, who must be sent out into chill fog of November morn-

ings well warmed and fortified against the chances of a lingering journey; there are children to be got off to school. And all these come home again as the light fades, some tired and chilled, others more hungry than fatigued. It is the woman's part, alone or with capable assistants, to see that the conditions of the home are such that for all its inmates the tendency to depression of vitality is well controlled and the troublesome germs of many a minor malady kept outside the front door. Short days, the journey home in the dark, foggy mornings and damp pavements, are the drawbacks of many winter days, and we must perforce take them as part of winter life in all our big cities; but such devitalizing influences can certainly be met with systematic exercise, well-ventilated but warm rooms, and well-cooked, nutritious food. Unfortunately, it is a fact that innumerable family circles meet evening after evening in stuffy, over-heated rooms, and then break up to spend the night in chilly bedrooms. This inequality of the temperature in the living-rooms, bedrooms and passages of the average English house is a prolific source of illness, and is responsible for many disastrous breakdowns amongst the invalid and aged when the cold weather comes. The sooner it becomes customary to instal such methods of heating as will more equally distribute heat throughout the house than at present is commonly the case the better it will be for public

health each winter, and the less readily will epidemics get a foothold amongst us.

The secret of keeping fit in winter-time, then, is a well-warmed and well-ventilated house, a good breakfast, a light lunch, and a substantial meal after the day's labours, with, particularly, avoidance of those common infections which are responsible for "feverish colds," "tonsilitis," "influenzal chills," and the like. In regard to these systematic exercise in the open air—such as the evening walk taken in all reasonable weathers—is a most helpful safeguard. Recent research has shown that exercise in the open, by drawing in repeated currents of fresh air, enormously increases the vitality of the lining membranes of the nose, throat and air passages, and so enables them the better to destroy or keep in check any germs that may attack them. Added to this there is in the home the simple but effective preventive measure of gargling the throat night and morning with a mild disinfectant solution. As to the children, for whom at this time of the year the added risks of measles, scarlet fever, and diphtheria are very pressing, the care of the mouth and throat is particularly important. For the rest, ample warm underclothing, boots that really keep out the damp, and protection from over-fatigue, are essential requirements for the little ones.

The rule should be for every one who is attacked by a severe feverish cold or chill to go to bed and

stay there for at least twenty-four hours; if the temperature has risen to 100°, to stay in bed until it has dropped again. The day's work must not be attempted at the risk of a damaged system and flabby heart or weakened lungs. If something has to be sacrificed to a "cold," let it not be health. How many tragedies occur amongst the middle-aged each year through neglect of this rule!

Bronchitis

As the years go by after forty it is not so easy to throw off a cold as it is earlier in life, and the difficulty about a cold that refuses to be thrown off is, as just noted, that it may so weaken the chest that a chronic catarrh is left opening the way to recurrent attacks of bronchitis.

Old man's "winter cough" may be one of the discomforts inseparable from age for some, but like so many other maladies it is out of place in the prime of life and should be strenuously resisted until the germs which have got a foothold in the bronchial tubes are defeated, and the tubes themselves so far restored to health that they can resist even the worst of our winter weather. It is, as before, a case of Man versus the Germ; a middle-aged man should attack germs with every device known to modern science. There has been far too much truckling to the term "chronic": let

us not admit that ill-health is chronic until it is proved that such destruction of tissues has occurred that organs are irreparably damaged and must in future work but indifferently in consequence. Where this is not so persistent endeavours should be made to get at the root of the trouble. Ill-health is physically, in the main, a question of poisoning and the object of treatment should always be to trace the source of poisoning as far as possible, and to use every endeavour to check its origin and to destroy or neutralize the poison already formed. The importance of this can scarcely be over-emphasized, although it is admittedly a difficult task in many instances, particularly where the trouble is long-standing and one after another of the body's defences has weakened or given way.

Oliver Wendell Holmes said that chronic bronchitis was one of those ailments that make for long life: true enough that the careful habits formed by attention to the calls of a persistent cough may, in the long run, add years to an old man's life. But I cannot insist too strongly that no one under seventy years of age should think of themselves as having anything to do with the adjective "old."

In middle life no man or woman should settle down to chronic bronchitis without making a supreme effort to get rid of the causes producing it.

Influence of Clothing

One of the great secrets in maintaining health where there is a tendency to bronchial weakness, is to be found in careful adjustment of underclothing to the needs of the individual. Woollen underclothing—or undergarments with a high percentage of pure wool—should always be worn next the skin, and a weight and thickness should be secured that is satisfying on the average English day. These should be worn *by day and by night*, and the frequent changes necessary under such circumstances should be made at bedtime only and in a warm room.

In cold weather a second layer of the same consistency or lighter—never heavier—should be worn in addition, and this may be discarded at night. In the summer, coolness must be secured by sacrificing "overclothes," but not the protecting underclothes.

Avoidance of very thin socks in favour of those of substantial weight, even in warm weather, and particularly avoidance of frequent changes from thin to thick, or vice versa, complete the protection given by the right underclothing.

In this way, security that they will not obtain in any other way can be given to the weakly in regard to chills. As in middle life chills have to be avoided at all costs, these simple rules of clothing may well be borne in mind.

About going Abroad

Often enough the question of escaping serious bronchial discomforts by going abroad has to be raised, and the answer can only be arrived at by studying the particular circumstances of the individual. Nevertheless, there are certain general principles in this matter which are applicable to almost every instance, and it is these which may be brought to mind here and now. In the first place, let us admit that the climate in various foreign resorts—notably in Egypt, Algeria and the South of France—undoubtedly makes for health and comfort for many whose weak chests are much upset by the vagaries of our own winter weather. But the thing is to get to one of these and back again without experiencing such fatigue and risks as will entirely outweigh any good that may be obtained by the actual residence in a sunnier land. The world is a much rougher place to-day than it was in those halcyon days before the war, and many an invalid who finds himself comparatively fit and well at home is likely to feel severely the strain of travelling far. It is not only the actual stresses to be faced, but the thought that the journey may not go smoothly that very much upsets the seeker after better health ; and when he is at all nervous this may react seriously on him. Conditions may be expected to improve as years go on, but for some

time to come journeys abroad should only be undertaken after very grave consideration. In a word, to go abroad may be beneficial to the bronchitis, but at the same time it may be harmful to the individual. The question to be asked and answered is: Are my means and the facilities offered such that I can ensure approximately the same comfort and freedom from strain or sudden changes that I can at home? If not, then I had far better go to Bournemouth, Torquay, Sidmouth or some other home resort that experience has shown to possess a climate quite favourable to those suffering from bronchial troubles. It is much easier to disturb the balance of health in middle life than it is to redress it.

Asthma

At times associated with bronchial catarrh, at others seemingly independent of any inflammatory disorder of the chest, asthma is one of the most troublesome maladies that afflicts the middle-aged. In the years of greatest interest and endeavour it is a particular nuisance because it occasions so many interruptions and calls for so many special arrangements in daily routine. Certainly by forty most asthmatics have learnt in the hard school of experience just what they can and cannot do. But here, as in every other branch of health, the public suffer from want of systematic

instruction from the medical side, and lack knowledge of the underlying conditions that are largely responsible for the paroxysms of asthma. Instead they are offered a variety of "cures," from inhalations to hypnotic suggestion, from nose-burnings to vaccines, and from breathing exercises to hypodermic injections. To know the cause —or possible cause—of a breakdown in the rhythm of life is, at least, to give one an opportunity of getting rid of it.

There are many theories of asthma, and the sufferer had best not confuse his thought with attempting to understand them, but he certainly is concerned with those ascertained facts about the causation of asthma that every doctor has at his finger-tips.

For example, it is well known that an indigestible meal, particularly late at night, is very likely to cause asthma in many persons; also that coffee, flatulence, irritating conditions of the nose and throat, gout, on the material side, with worry, fear, overwork, and "nerves" on the psychological side, are just as prolific disturbers of the peace where the individual is susceptible.

The train set and all being ready, something quite trifling coming within the category of one of these things will quickly cause a violent explosion. Moreover, as there is nothing so irritating to the nervous machinery of the body—and be it remembered the "attack of asthma" is in itself a nervous

upheaval—as the continuous absorption of poisons from stomach or bowel, every endeavour should be made to search diet and habit for any likely cause of such poison manufacture as may be at work. Even where a combination of small causes is at the bottom of the trouble, and so hidden as to elude the most patient search, it will be found that careful attention to digestion and the functions of the alimentary canal generally will greatly add to daily comfort by tending to lessen the frequency and severity of the asthmatic storms.

Yet one not infrequently meets with asthmatics who for years have persevered unavailingly with various empirical and so-called specific *remedies*, without having obtained any understanding of the possibilities of *physiological adjustment*.

Some of the facts about asthmatics were well put by the late Sir William Osler, who in regard to causes wrote: "The affection sometimes runs in families, particularly those with irritable and unstable nervous systems. The attack may be associated with neuralgia or, as Salter mentions, even alternate with epilepsy. Men are more frequently affected than women. The disease often begins in childhood and sometimes lasts until old age. For years asthmatic attacks may follow whooping-cough. One of its most striking peculiarities is the *bizarre* and extraordinary variety of circumstances which at times induce a paroxysm. Among these local conditions climate or atmo-

sphere is most important. A person may be free in the city and invariably suffer from an attack when he goes into the country, or into one special part of the country. Such cases are by no means uncommon. Breathing the air of a particular room or a dusty atmosphere may bring on an attack. Odours, particularly of flowers and of hay or emanations from animals, as the horse, dog, or cat, may at once cause an outbreak. Fright or violent emotion of any sort may bring on a paroxysm. . . . Diet too has an important influence, and in persons subject to the disease severe paroxysms may be induced by overloading the stomach, or by taking certain articles of food." [1]

In the matter of treatment the same authority observed that: "Particular attention should be paid to the diet of asthmatic patients. A rule which experience generally compels them to make is to take the heavy meals in the early part of the day and not retire to bed until gastric digestion is completed. As the attacks are often induced by flatulency, the carbohydrates should be restricted. Coffee is a more suitable drink than tea. In respect to climate it is very difficult to lay down rules for asthmatics. The patients are often much better in the city than in the country. The high and dry altitudes are certainly more beneficial than the seashore; but in the protracted cases,

[1] *Theory and Practice of Medicine*, p. 628.

with emphysema as a secondary complication, the rarefied air of high altitudes is not advantageous. In young persons I have known a residence for six months in Florida or Southern California to be followed by prolonged freedom from attacks. Egypt is a peculiarly satisfactory winter climate." [1]

Evil Effects of Fog

Fog is one of those evils that we seem to take for granted as part of winter's discomforts, and we put up with its ill-consequences to health in a spirit of resignation. Nevertheless, it is a very serious factor in our lives, and the toll it takes a heavier one than is generally realized. Countless business men and women who break down in winter would get through the dark days without much difficulty were it not for those foggy spells which inevitably come. Thus it is that any consideration of health for the individual Londoner must allow for the harmful effects of fog, and when the time comes for science to free us from this nuisance it will be possible to forecast more years of healthful activity in business for many than one can do at present. Up to thirty-five or forty years of age fog is chiefly injurious to those who are constitutionally weak in their chests ; often enough it brings out a weakness that was not perhaps

[1] *Theory and Practice of Medicine*, p. 631.

suspected. However this may be, we are bound to appreciate the fact that it is almost hopeless for young City workers with weak lungs—particularly if there is any suspicion of tuberculosis—to expect to make headway when the air is loaded with moist and grimy particles carrying not only a myriad germs but acid compounds of the most irritating character.

Fog as we get it in London is, indeed, a mild variety of mustard gas, which congests the air passages and throws a great stress on the delicate tissues of the lungs. Even the most robust of us feel a tightening of the chest and smarting of the eyes, that evidence severe irritation, as we turn out from our warm rooms into a good old-fashioned London "particular." Country fogs are injurious to the sickly mainly owing to the damp chill with which they are associated, but they do not carry the irritating chemical substances and soot that characterize the City brand; neither are they swarming with the microbes of influenza and catarrh as is the latter. For children and elderly persons who are not very fit a few days' fog may mean the beginning of catarrhal troubles of chest and throat that give rise to much subsequent illness and anxiety. Fog is unquestionably one of the greatest enemies to public health.

It may be taken as a general rule that the more deeply seated is any tendency to persistent catarrh the worse is it affected by foggy weather; one

finds that bronchitis and the bronchial asthmas associated with it are two maladies that are frequently lighted up by such an atmosphere as we often have to breathe for several days. The sufferer from chronic bronchitis—that is, one who has never been able to get rid of the trouble completely, and experiences a fresh "attack" as soon as circumstances favour it—is at a great disadvantage in a London fog, and is better away in warm and sunny surroundings. The unfortunate victim of this troublesome ailment who gets caught by fog ere he has time to get away or must perforce keep engagements in town in spite of the weather, will do well to wear a respirator out of doors; for this little contrivance not only warms the air passing through but can readily be arranged to act as a filter to catch the germs and irritating particles with which fog abounds.

Indoors he should keep in as even a temperature as possible, and for ventilation, whilst having a window open 6 inches or so, should nevertheless have the gap filled up by a wooden frame, across which butter-muslin has been tightly stretched. The air coming in from without is thus filtered of its soot at least, and with the soot much other deleterious matter is caught. When this simple screen is examined later on, the saving to the lungs can well be seen in the grime which it has caught. For the children, their best protection is to keep them at home, whilst play-rooms and

nurseries can be well ventilated and at the same time protected by the use of such a "fog-screen." As with some adults, it is often found that children suffer from unpleasant digestive disturbances if out for long in a "black fog"; the headache, sickness, and giddiness thus occasioned undoubtedly being evidence of a real fog-poisoning.

CHAPTER IV

THE WAY OF FITNESS

Fitness in Middle Age—Call for Moderation—Taxation of Efficiency—Dangers of Inertia—Readjustment—Establishing better Habits of Health—Breaking the vicious Circle—Diet and Digestion—Do we eat too much Meat?—Common Causes of poor Digestion—The Best Meal of the Day—Cutting the Courses—The Question of Afternoon Tea—Luigi Cornaro—His remarkable Record—His System—The late Sir Hermann Weber on Moderation in Diet.

WE see then that fitness in middle age is a matter of keeping up such a state of general health that the natural movement towards rigidity and lessened activity of tissues proceeds so slowly that it occasions no inconvenience; and to do this it is vital to keep the machinery of the body clean and in good running order, knowing that nothing so ages it as the poisoning and clogging that result from careless usage. Regularity of life, moderation in energy-output, easy digestion, systematic exercise of body as of mind, and fresh air are the conditions that make for sound health and in middle life especially are the foundations of fitness. The misconceptions of many middle-aged

persons are based on the demands of the unfit body ; they result from a misunderstanding of the fact that when out of order the system appears to call for various things—alcohol, drugs, and more flesh food, for example—just at the very time when it will be least benefited by such. As an example of this one recalls the stout man of forty-five who gets " puffed " on going upstairs and thinks that his system is failing for want of stimulant or nourishment ; whilst all the time he is suffering from an accumulation of waste-matter in the form of fat due to the fact that he habitually eats more than his system requires having regard to the little exercise he takes. Apart from acute disease or specific illness which are amongst the everyday hazard of life men and women between forty and sixty suffer enormously in health owing to the wear and tear incurred by the circumstances under which the majority have to live ; a wear and tear that is intensified many times in all big cities in the winter months. The way of fitness can only be followed by striking a path across the many obstacles to health which modern life favours ; for some this is almost impossible, but there are many to whom better health—and therefore greater sense of well-being and of the value of life—is possible who neglect their opportunities in this direction year by year. Moderation in work, in play, in food and in drink is the pass-word for all who would proceed upon the golden way of fit-

ness : not the rule of the anchorite or the fanaticism of the crank, but just the sway of common sense tempered by science.

It is always easier to keep well than to get fit again after a breakdown : prevention is better than cure, and really the gospel of health should be preached as much to the fit as to the unfit. Probably the day will come, as already foreshadowed in the land of "Erewhon," when to become sick will be regarded as a misdemeanour, and in that era of super-science men and women will really study the art of keeping well and not trust to haphazard rules of life and hygiene : then will preventive medicine, now in the first uncertain days of its infancy, come into its full inheritance as one of the great social influences for good. To-day there are far too many men and women passing through middle life handicapped—more often than they realize—by a serious taxation of their true efficiency : they live at a lower level of output and enjoyment than they need, and over their heads is the persistent shadow of breakdown. They are caught in the prison of their unfitness and find it difficult to attempt a breakout. The arm-chair and the fireside call very strongly to the tired and unfit business man when his day's work is over ; whilst at a heavy evening meal he tries to infuse his flagging system with the vitality it has so obviously lost. And so it is hard indeed for many to make a start towards healthier con-

ditions: their descent is slow and so comfortable that they readily persuade themselves that all is well; but there is a nasty bump waiting for those who slip down too far. It is tragic for a man of fifty to be told that his inertia has let him in for a state of things so unsatisfactory that he must give up work for six months, and even then not be able to look forward to any more outdoor games. After all it is largely a question of habit, and once the habit is formed of taking things in more leisurely manner, with due attention to the simple precepts of healthy living, a great deal can be done to get rid of unfitness, to replace "puffiness" by easy breathing, to banish rheumatic pains, to keep the digestion, bring back good sound sleep, and generally to rejuvenate tissues that were becoming prematurely aged.

But just as the maintenance of fitness calls for *moderation* and *regularity* in all things, so does the return from unfitness demand *moderation in the cure itself*. The unfit individual is, as we have seen, one who suffers from a lazy and perhaps irritable heart, a loss of elasticity that makes all reactions slow and even a little difficult; hence his journey back to a better state of things must be undertaken slowly at first. Any attempt to make a quick change in fitness will be resented by every organ of the body; each system must be coaxed back to better efficiency and, moreover, supported as far as possible by common-sense

measures until it can establish its workings on a sounder basis. Heart, circulation, breathing, and digestion are all adjusted to a poor level of work in the unfit; nevertheless they are *adjusted to each other*, and any disturbance of habits of one will react on the others, and if this disturbance be severe the general upset may be so great that a breakdown is precipitated instead of being prevented. Thus if in the first burst of enthusiasm for regaining fitness a scheme of strenuous deep-breathing exercises is carried out without preparation, the heart and circulation may be seriously strained; or if our enthusiast is carried away by keenness for a reformed diet and "goes in off the deep end" to the point of starvation, he may so lower his general vitality that fainting attacks occur, or worse. *It must be a first rule of health reform to go slowly and not to throw too great a strain on the admittedly unfit mechanisms of the body.*

Shorter hours of work, greater regularity in daily programme, a little less meat and stimulants, more time for meals, and a definite though quite short walk each day extra to the usual routine are useful conditions with which to make a beginning. And to give the system assistance at the outset *there is nothing so helpful as a firm binder or other form of mechanical support to the front wall of the abdomen.* For the average man or woman a well-fitting adjustable belt some three inches wide, and made of *inelastic* material, will

do all that is needed; but those who are very thin and those who are unduly corpulent may have to be especially advised before they can be satisfactorily suited. Whether it be a simple binder, or a specially made belt, or such an excellent combination of metal plate and side springs as the "Curtis," which is worn by innumerable middle-aged men and women to-day, an efficient abdominal support is of incalculable value in stopping the rot of middle age and in restoring fitness. By its action on the abdominal wall itself it braces up all the organs of digestion, promoting their better action, reducing flatulence, and directly correcting the disastrous effects of that sagging of the suspensory ligaments which has been noted as a common phase of flagging health as years advance; at the same time it stimulates the circulation in the abdominal cavity and restores to the general circulation blood collected there. This in turn reacts beneficially on the heart and circulation as a whole, so that the "vicious circle" so often found operating to the disadvantage of the unfit person is broken at more points than one and a healthy adjustment effected. Moreover, by restricting the to-and-fro movement of the slack abdominal wall, a good belt or support throws back the breathing to the chest and so leads to more complete expansion of the lungs and generally better purification of the blood. In all these ways health is benefited by giving support to the abdomen, common sense

being exercised as regards the degree to which the tightening-up process is carried out; many find it difficult to put up with even moderate pressure at first, and the guide should be the extent to which breathing appears to be hampered at first. It takes a few days for the respiratory apparatus to readjust itself, and until this happens the chest still remains rigid and acts but poorly. *Moderation* and *graduation* are here, as always in the science of keeping fit, the keys to success.

Diet and Digestion

Then, again, the daily diet sheet plays a very important part in the maintenance of fitness. Every one over forty should ask the questions, Do I eat too much? Do I eat too much meat? and be quite candid with himself or herself in answer. Occupation, exercise, general habit of living, and constitution all must be taken into consideration, but if there is any doubt as to the butcher's bill being too big, let it be cut down ruthlessly. Individuals vary so greatly that hard-and-fast rules applicable to all cannot be made: still it is better to err on the side of too little than of too much butcher's meat. This touches the whole question of digestion, and that faulty digestion that we have previously noted as being a prominent factor in the health troubles of the middle-aged. A good digestion is a gift of the gods.

It is true that there are some—usually of poor constitution and often of nervous temperament—who suffer indigestion from eating too little, but the majority of those who suffer from poor digestion in middle life eat too much. A life of hard work or dull routine, leaving little time for social pleasures—a life such as is led by countless prosperous men and women and by even more of those who work without much tangible reward —such a life tends to put the day's meals into a place of undue importance. The pleasures of the table are there to offer more readily stimulation and fresh interest than most other things: the line of least resistance is always so easy to follow. Moreover, as Emerson said: "Let the stoics say what they please, we do not eat for the good of living, but because the meat is savoury and the appetite is keen." Quite recently I came across a striking example of this in the case of a successful professional man who confessed that during the period of twenty years in which he built up the fortune on which he would be able to retire his main recreation and interest outside his work was his table. Needless to say he paid the penalty of immoderate eating, and insufficient exercise, and a serious breakdown in health prevented him from enjoying for more than a few years the reward of his toil.

This raises the whole problem of food and drink in middle life, for it is obvious that whilst the mainstay of health must be the nourishment we take,

it is equally true that faulty digestion and intestinal action, with resultant poisoning therefrom, are responsible for many breakdowns which occur between forty and sixty. Most people over forty eat too much; that may be taken as an axiom in everyday life. It is really very remarkable what a small quantity of solid food is called for by the demands of ordinary sedentary life. Work in offices and rooms takes very little out of the physical system, and hence not very much food is really required to maintain the balance between income and output of energy. And so meat, which is the great standby of the man who is engaged in strenuous muscular activity, is little needed by the office-worker, who, on the other hand, requires rather more fat, starch, and sugar to keep up his body warmth as he is able to use his muscles so little. Meat is the great energy-producing food; fats, sugars, and starches are the chief heat-producing foods, and yet one knows that it is the custom of city-dwellers generally to take meat at two if not three meals daily week in and week out. The climate of this country is such that a certain amount of meat each day may be considered necessary as a general rule; but that does not mean bacon or ham for breakfast, a steak for lunch, and a joint for dinner. An unnecessary allowance of daily meat is the handicap that hampers many a middle-aged man and woman who finds health and fitness impaired just when they

need all the energy they can produce to complete the work they set out to do. Meat is the cause of a great deal of the self-poisoning and debility that we have previously considered.

Among common causes of faulty digestion and resultant ill-health must be mentioned irregularity in meal times and the quantity of food taken at each ; insufficient time spent over meals ; eating when over-tired ; over-burdening the stomach with too varied a mixture of eatables ; bad cooking, and particularly that lamentable habit of using the frying-pan on every possible occasion and sending up meals in hot fat.

The late Sir William Osler—always apparently rather hard on the man over forty—insisted time and again that we eat too much in middle age. No sooner has a man reached his fortieth birthday than, according to this dictum, he must banish from his table many sweet and delicious things. But it is undoubtedly a matter of the individual and of the life he leads. Days spent in the open air, ample exercise, freedom from worry, and a sound constitution make it possible for a good dinner to be enjoyed with impunity, and a good breakfast and luncheon too. It is the town life which makes us poor digesters of good food. I doubt if our ancestors could have been even "one-bottle" men under the conditions which govern the health of the average business man in London, Liverpool, or New York.

The Best Meal of the Day

The best way to satisfy the demands of nature and at the same time provide enough energy for our daily task would be to have one really substantial meal each day and two smaller meals; at least three meals a day are required, and of these one should be far more comprehensive than the others. It may be said at once that the habits of centuries have so adjusted our digestive systems that we cannot do well without three meals. The average Britisher who attempts to copy the Continental plan of two good meals a day finds himself up against an inherited tendency and deeply rooted instinct which calls for three; that is why it is rarely found that the Englishman or Scotsman can comfortably fall in with the habits of his neighbours across the Straits of Dover. The difficulty is for the ordinary business or professional man to decide when he is going to arrange to have the best meal of the day. Those who can order their day's routine without particular reference to their work invariably find that they are most ready for a substantial meal at about 6 p.m.; then, having got through any more or less strenuous occupations, they are comfortably tired and look forward to a restful evening. At the same time they are hungry and the digestive organs have four or five hours in front of them in which to

deal with whatever may be ingested. A good breakfast—a light luncheon—and a really good meal at 6 o'clock represents a sound scheme of dietary ; it being assumed that breakfast is being taken not later than 8.30 a.m. and luncheon about 1 o'clock. But unfortunately 6 o'clock in the evening is not really a convenient time for the big meal of the day for most workers, whose supper hour tends rather towards 8 o'clock than earlier. As late as this they are too tired to eat very much, and there is no long evening afterwards for digestion. On the other hand, there can be no doubt that a heavy meal in the short luncheon hour is highly undesirable, as there is not enough time to deal with it satisfactorily, and in the afternoon the blood is needed to energize the brain for work and cannot well be spared to assist the stomach in the processes of digestion. This is a serious dilemma for thousands of city workers and others ; and those who can would do well to get home by 6 o'clock if possible, even sacrificing morning hours or part of the luncheon time to accomplish this. However, whatever time be selected for the best meal of the day, let it be a really well-cooked, tasty, and substantial affair. One wants at least two good solid courses and numerous appetizing additions, but it is *not in the variety of courses* that the substance of the meal should reside ; two good courses are enough, and whatever else is provided should be regarded as in the way of aids to appetite

and digestion. We do not need soup, fish, entrées, meat, sweets, savoury, and dessert in full array. The extras are better provided in the way of *hors d'œuvres* at the beginning with plenty of small appetizing fruits and sweetmeats for dessert at the end. If soup is to be taken, it should be made a good substantial course; ample nourishment can be obtained from a properly made soup such as a fine Scotch broth. The miserable solutions that are habitually served up in the alternative "thick or clear" contain practically no nourishment and merely serve to dilute the digestive juices and distend the stomach without in any way aiding digestion or adding to the benefits of a meal. Again, if fish is taken it should be in ample portions and constitute one of the two substantial courses of the meal; and so with cheese or fruit; with meat or game, and so forth. A very substantial meal can be obtained in which one of the courses consists entirely of fruit; but the fruit should be judiciously chosen, adequate in quantity, and fresh or cooked according to the nature of the course previously or subsequently taken. Cheese is often much reviled and given a bad name because it is injudiciously used; cheese should be taken as a substantial course by itself, and not as an extra to an otherwise good meal. There are thousands suffering from indigestion whose trouble is largely due to the fact that they eat too much of too many kinds of things at a meal; they

do not concentrate on one or two things that are nutritious and digestible. *Nothing is digestible if it is mixed with too much of other things at the same time.* The stomach and its co-workers are quite able to do their work in many of these cases of so-called indigestion, but they are first given orders to pour out one kind of digestive juice, then another, and then another, until the limits of physiological harmony are passed, and the equilibrium of the digestive system is thoroughly upset. A resort to a rational two-course plan for the chief meal of the day, and a one-course plan for the other meals, will frequently correct these disabilities.

For it follows that if the best meal of the day is to consist of two substantial courses, the lesser meals can well be based on one good course each.

It will be noticed, of course, that nothing has been said about afternoon tea. Certainly nothing can be said in favour of it except that it is a pleasant function. We all take it, and most of us like it very much; but, nevertheless, afternoon tea is undoubtedly a meal that violates all the canons of physiological law and, however pleasant, is responsible for innumerable cases of indigestion. It is not the tea itself—except where it is coarse and overbrewed—it is the mixture of soft carbohydrate foods taken in unnecessary quantity at the same time that causes trouble. By 4 o'clock the stomach has not finished its work of digesting its midday meal; it is gathering up its final energies to complete this task and

then to propel the digested mass into the next section of the alimentary canal. At this point afternoon tea is announced and forthwith it has to cope with hot butter, bread, cakes, and jam, with, frequently enough, all sorts of odds and ends in the way of chocolate and cream. It is a case of survival of the fittest; many survive the ordeal without any present signs of distress. Thousands develop indigestion slowly but surely. Over forty they develop indigestion far more certainly than many of them care to admit. What is the cure? Are we to abolish afternoon tea with all its pleasant associations, its bon-bons, its tea-cakes, and its generally enjoyable paraphernalia? It is hard to say. Afternoon tea might be permitted to survive as a reasonable meal if reduced to reasonable proportions of two cups of very weak tea and two or three dry biscuits. In this form it would act as a useful wash to the stomach, aiding it to the last stages of digesting lunch. Each of us has to decide for himself or herself what we should do about afternoon tea. Most of us will yield to its temptations and hope for the best until the note of warning is sounded somewhere within us. But undoubtedly the wise man or woman of over forty who wishes to preserve health and digestion into advanced old age will begin to reduce the proportions of this most pleasant meal. Undoubtedly our ancestors behaved more reasonably at this hour of the day than we do, for their

glass of sherry and a biscuit was quite in keeping with the demands of physiology, which asks that the stomach shall have a little fillip at about 4 or 5 o'clock without being given fresh work to do.

A Classic Model

One finds in the classic writings of old Luigi Cornaro a very interesting account of failing fitness remedied and poor health made good by systematic adherence to the doctrine of moderation; indeed, not only did Cornaro defeat ill-health at the threshold of middle age but he held the fort serenely for *nearly sixty years more!* A Venetian noble who had lived the luxurious life of the early sixteenth century, he found himself a miserable man as he approached his fortieth year; many distempers, colicky pains, and gout were amongst his numerous maladies, to say nothing of a lingering fever and intolerable, persistent thirst. And, like others, he suffered many things at the hands of many physicians without obtaining relief for his troubles. Then some wiser than the rest "told me that they knew of only one remedy that could cure me, if I had resolution enough to undertake and continue it; and that was a sober and regular life, which they intreated me to lead for the rest of my days, assuring me that if intemperance had occasioned such a number of distempers,

it was only temperance that could reinstate me in my former good health." This proposal made a strong appeal to the valetudinarian young noble, and he determined to bring all his will to bear so to number his days that he might live temperately and to good purpose. That he was successful beyond measure is well-attested by the vivid notes of his health and history that he wrote when aged under the title *Of a Sober and Regular Life*; also by the evidence of his relatives and contemporaries that as a nonagenarian he was wonderfully fit and well. Ultimately he fell asleep without distress or pain, having not quite completed his hundred years of life on earth.

Cornaro's method[1] may be summed up briefly as comprising, regular exercise; fresh air; great moderation in eating and drinking; and—a contented mind.

Evidently his story and remarkable progress from being very much of a physical wreck to great and useful activity of mind and body made him quite famous, and gave him some occasion to speak with authority on questions of health and diet; thus it was that in his eighty-seventh year he wrote with remarkable shrewdness about the

[1] An excellent translation of Luigi Cornaro's teaching is to be found in a little book published by Messrs. Philip Allan & Co., London, in The Pilgrims' Books series, entitled *The Art of High Health*: it is from there that I have taken the quotations given.

early decay of health and how to prevent this. He summed up the general position as follows: "Numbers of people whose weak constitutions required managing with considerable care, having been well pleased with what I have written concerning sobriety, the experience they have had of the value of my counsels, and the acknowledgments which they have made thereof, encourage me to take up my pen again, that I may convince those who meet with no inconvenience from intemperance that they are to blame for relying so much on the strength of their constitutions. These persons seldom arrive at sixty without decaying all of a sudden and finding themselves loaded with a complication of distempers. Some are gouty, dropsical, and rheumatical; others are subject to colic, the stone, and piles; in short, to an abundance of distempers which would never have happened to them if they had been so wise as to have taken care of themselves in their youth. If they die infirm at fourscore years of age they might have lived in health to a hundred, and so have run out the term of life which Nature has left open to all men."

But Cornaro certainly did not deprive himself of all good things; it was *moderation*—"divine sobriety . . . daughter of Reason"—that he advocated, not total abstinence from flesh, fowl, and good red herring; thus among the articles of diet which he specifically mentions as commonly on

his table are bread, soup, eggs, veal, kid, mutton, partridges, pullets, pigeons, and various kinds of fish. But he restricted himself to just under a pound of solid food daily. Neither was he an abstainer, for he allowed himself three-quarters of a pint of wine each day. *Moderation* and *regularity* were the foundations of Cornaro's system, and he owed some sixty years of healthy life *after* his fortieth birthday to following out his principles of diet and hygiene. Five centuries afterwards he was followed in theory as in practice by that shrewd philosopher Sir Hermann Weber, some of whose observations on the attainment of health and long life I have quoted to emphasize special points in this little book. Cornaro was so right in his views that in the five hundred years that have passed since his time none has been able to plan out a more common-sense and practical way of life. It works now as it worked in medieval times. "It is this divine sobriety which is always pleasing to God and always the friend of Nature. It is the daughter of Reason, the sister of all other virtues, the companion of Temperance, always cheerful, always modest, always wise and regular in its operations. It is the root of health, of industry, and of whatever becomes a great soul to be employed about. It has the laws of God and Nature both to justify and enforce it. And when it reigns, repletion, disorders, evil habits, superfluous tumours, fevers, aches, and the fears of death, do not disrelish or

embitter our pleasures. O sacred and healthful sobriety! The powerful support of our nature, the true physic of body and mind! How ought men to praise thee, and acknowledge thy benefits, since thou furnishest them with the means of attaining heaven and of preserving life and health here on earth." Cornaro did not know that an overloaded digestive system led to a deadly process of slow poisoning responsible for most of the worst maladies of middle life; but he did know that by reducing the burden to reasonable proportions youth could be renewed and health restored. He relied on that ounce of practice which is always worth a ton of theory. Weber followed him with: "Often, indeed, have I noticed in practice that persons eating largely and constantly suffering from various troubles—dyspepsia, headaches, neuralgia, mental depression, irritability, etc., when placed for several months on a reduced diet, got rid of all their ailments; many of them afterwards, when returning to their usual excessive diet, began again to suffer, but recovered almost immediately on diminishing their intake. . . . As a proof of the beneficial influence of great moderation, I may also mention the fact, often observed, that persons with delicate digestion from an early age onwards, who could take but very small quantities of food, only one-third of what the rest of their family and the majority of people took, and only special kinds of food, such as milk, cream, light

puddings, eggs and the smallest quantity of boiled chicken or whiting or sole, without suffering, usually remained free from gout, rheumatism, neuralgia, and other complaints, and lived much longer and enjoyed a much healthier old age than the more vigorous companions of their youth, who could and did eat large quantities of food with enjoyment and with *seeming* impunity."[1]

This same keen student of the way of life supported his thesis that many of us eat far too much—with which I entirely agree—by his own experience, about which he wrote: "Many years ago I observed to myself that the reduction of the amount of food, . . . enabled me to do a larger amount of work without the feeling of mental fatigue and exhaustion, and craving for tea or coffee one or two hours after a meat lunch." Another acute observation that he made was to the effect that: "I have also almost invariably observed an improvement in the *complexion* of persons who had exchanged light meals, with little meat, for the heavy meals which they formerly had been accustomed to."[2]

The work of Sir Hermann Weber is particularly important because, living to the great age he did and throughout his life being greatly interested in problems of diet and health, his last written remarks

[1] Sir Hermann Weber, *Longevity and the Prolongation of Life.*

[2] *Ibid.*

were based on an unrivalled experience of at least *sixty years*, in the course of which he personally investigated the histories of over a hundred individuals who lived into their eighties and nineties. And so I give yet another quotation from his excellent work on longevity, as it so well sums up the position about moderation in eating: "Most persons indulging in a large appetite, whether abstainers from alcohol or not, if you tell them that they must reduce the amount of food, must take only little meat and flesh food and alcoholic stimulants, think that you are going to starve them, that it is impossible for them to do their work on reduced allowances. They are mostly confirmed in this view by their relatives and friends, especially the female part. They ascribe any feeling of lassitude, headache, disinclination to active work, to the diminution of alcohol and meat, and under this impression discontinue carrying out your suggestions. They forget that the same symptoms are mostly caused by too large meals, or by constipation and absorption of toxins. It is quite true that in some people such reductions, when made too suddenly, have unpleasant effects, but only temporarily; and if the reduction is made gradually, the body becomes easily accustomed to it and the mind also. Some of the inconveniences felt are with many persons due merely to the fear of being 'lowered.' Experience in many hundreds of cases authorizes me to say that more or less

gradual reduction, carried out with judgment and perseverance, leads almost always to increase of mental and physical power, greater resistance to disease, cheerfulness, and the prevention of premature old age."

CHAPTER V

THE QUESTION OF SLEEP

Bad Nights often Due to Poisonings—The Absolute Minimum—Insomnia sometimes a Bad Habit—Good Nights and Long Life—The Test of Sufficient Sleep—Uncalled-for Fears about Sleep—On Sleeping too much—Various Types of Insomnia—Common Causes of Bad Nights—Some Simple Remedies—Sleep and Digestion—Drug Sedatives to be avoided.

THERE is no doubt that in middle life much less sleep is necessary for health than is popularly supposed. What is needed is, of course, a definite spell of sound, unbroken sleep, provided this lasts for at least four hours ; it is quite enough for the maintenance of good spirits and full activity if the system is otherwise in right order. A great deal of the heaviness, slight headache, fatigue, and general mental discomfort experienced by many people in the late morning—say from 5.30 a.m. to 8.30 a.m.—is really due to faults in the digestion and the poisonings resulting therefrom. Much that is attributed to insufficient sleep is due to inefficient digestion, "liverishness," and want of fresh air. I do not suggest for a moment that four

hours' sleep is all that is needed habitually for good nights; for most of us the early morning hours hold no particular attraction and an extra two hours or so are all to the good. But I emphasize the four-hours standard as a healthy minimum because so many light sleepers worry themselves needlessly about the number of hours they sleep. Nothing is so upsetting to sleep as thinking too much about it. Sleep is a normal habit, and like other habits may become disturbed: thus "insomnia" is often no more than a bad habit which has been got into through some temporary circumstance, such as sitting up with a sick relation, staying for a time in a room overlooking a noisy thoroughfare, and journeying by sea, and so forth. To bed by 11.30 p.m. and to wake about 6 a.m. is a really good night for every one over forty who is not over-harassed, debilitated, or doing particularly hard work all day. I have always agreed with the well-known maxim that sleep in the early part of the night—say before 2 a.m.—is worth ever so much more than sleep that only comes with the milk, as it were.

That a long night's sleep is not necessarily essential to health or to the attainment of hearty old age is witnessed by the experiences of many men of mark. In his famous work on *Longevity and the Prolongation of Life*, the late Sir Hermann Weber, a physician who himself enjoyed strength and ample vitality of mind and body in the nineties

and was as hale an octogenarian as could be met, especially emphasized the fact that he had never been a good sleeper. He wrote: "I have always been a bad sleeper from an early period of my life, but especially after the age of twenty-eight, when for more than thirty-five years I rarely was in bed for more than six hours, and awoke almost any night twenty times and oftener. At first the idea that this must weaken my working power worried me and lengthened the waking intervals between the spells of sleep, but when I gradually learned that my health did not suffer and that I could do my work and keep my weight in spite of imperfect sleep, the waking intervals became shorter." Commenting on this the same writer observed: "Much sleep, viz. over eight hours—I speak here of adults—is mostly more injurious than too little, especially in persons of full habit, by causing diminution of nervous energy, degeneration of the small arteries and capillaries of the brain, and in consequence apoplexy or premature decay of mental faculties." And in support of his belief that "Excessive sleep blunts the senses and renders them less fit for the duties of life," he cites the cases of various well-known men who succeeded in obtaining distinction and doing great work although not heavy sleepers. "John Wesley, the well-known divine, it is stated, rose for sixty years every morning at 4 o'clock, and never slept more than six hours. Sir Julius Benedict, the musician and composer, told me

that from an early period of life he mostly slept only four hours: he lived to eighty-one. I could give numerous instances of great mental workers who, from the beginning of adult life, were in the habit of rising always between 5 and 6 o'clock, even if they had been obliged to remain up till after midnight once or twice a week, and who lived and retained their working power, in spite of these short hours of sleep, to from seventy-five to eighty-five years of age, or even longer. Several judges of my acquaintance, while on duty, rise at 4 or 5 and prepare themselves for their work without apparently shortening their lives" (p. 226).

Test of Sufficiency

The test of sufficient sleep lies not in the actual number of hours of unconsciousness but in the general progress of health: it may be a bore to wake in early morning hours, but it certainly is not necessarily dangerous to health. The bogey of "something going wrong with the brain" because sleep is somewhat curtailed does far more harm in the world than the want of sleep itself: it is a very real bogey to many, and causes a great deal of misery and fear until it is scared away by a little common-sense talk. If weight is maintained, the head clear, digestion good, and each day brings with it a sense of well-being, why worry about sleep if four or five hours are obtained each night?

Time and again I have noticed that it was not until something called attention to the fact of rather early waking that people have begun to attribute various "symptoms" to this cause. Aches, pains, and bodily discomforts soon make their appearance once we begin to look out for them, and particularly if we think they ought, so powerful is the influence of the imagination and so susceptible are we to the wrong kind of suggestion. And so strongly is the belief held that early waking may lead to speedy mental breakdown that the other side of the question is invariably ignored. In the ordinary course of events, the doctor is never asked for advice because of too many hours' sleep at night: it is tacitly assumed that one cannot have too much sleep. But there are many who suffer from the effects of over-sleeping without realizing it. It is those pleasant naps after once becoming wideawake that are stupefying to the senses and depressing to the whole system: to wake up and get up should be our rule after a sound, refreshing sleep.

Nearly a hundred years ago Sir John Sinclair, in his *Code of Health and Longevity*, made a special point of the disadvantages of too much sleep, noting that: "Nothing is more pernicious than too much sleep. It brings on a sluggishness and dullness of all the animal functions, and materially tends to weaken the body. It blunts and destroys the senses, and renders both the body and the mind

unfit for action. From the slowness of the circulation which it occasions, there necessarily follows great corpulency, a bloated habit of body and a tendency to dropsy, lethargy, apoplexy, and other disorders."

The insomnia which is troublesome is that form in which there is great difficulty in getting off to sleep, as the precious hours from 11 to 2 may be wasted, and the sufferer has not the advantage of the few hours' rest and recuperation that are enjoyed by those who soon get off to sleep, but wake at 2 or 3 in the morning. The chief things that prevent the onset of sleep at bedtime are an over-tired brain or an over-excited mind; the one representing excessive fatigue on the physical side and the other a simple effect on mental processes. That moderation in general work and play, and the reasonable use of the organs and faculties, which is so essential a condition of fitness in middle life and advancing years, is the best remedy for this type of sleeplessness. It is again a question of the lessened elasticity in all the functions of life which I have dealt with at some length as a leading and quite normal characteristic of middle age: there is no longer the capacity to react to over-strain and exhaustion that belongs to the twenties and thirties. Our machinery of mind and body is developed and set as it were for the great tasks of life, it is not for us to over-strain it so that at the end of the day's work sleep will not come and

tormenting thoughts about business and domestic affairs race through and through the head.

Causes of Sleeplessness

Some are more susceptible than others to mental excitement, and those who find, by experience, that serious work and study in the late evening prevent them from sleeping, have no need to seek a prescription for a sedative. Let them occupy the hours after dinner with some quiet hobby or amusement, and whenever possible take a turn out of doors before retiring, and they will find themselves settling down comfortably to a good night's rest. Where there is the support of a sound philosophy of life, the human mind all the more readily gives itself up to blessed slumber. Of physical causes preventing the ready advent of sleep, the following are often found to be at work, either singly or two or three together, when one makes a careful analysis of individual conditions :—

an uncomfortable bed;
want of fresh air in the bedroom;
an over-heated atmosphere;
a too high or too low pillow;
persistent or intermittent noises either outside or in adjacent rooms;
that type of circulation which reacts slowly on cold nights, and results in very cold extremities;

an empty stomach;
some irritation of the skin.

These, indeed, are simple enough causes in themselves, yet one often finds that they are not discovered by those who cannot get off to sleep; perhaps it is rather that they have not realized the importance of apparently trivial circumstances in spoiling a night's rest.

It may be noted here that the plan of raising the foot of the bed on two blocks of wood, 6 or 8 inches high, will often ensure sound sleep for some who have difficulty in reaching the Land of Nod: the explanation being that a slight but necessary adjustment of the circulation is thus effected.

Most of the other conditions indicated in the list suggest their own remedies, and as to the bed itself, most of us have our own little fads and fancies: that is why sleeping in a strange house so frequently means at least one poor night, the unaccustomed pressures on the recumbent body being quite enough to disturb even those who are habitually sound sleepers. But the question of the pillow is not always easily settled: the general rule should be that the head is not raised more than 4 inches above the level of the bed, and that in any case there should not be an undue bending of the head either backwards or forwards. A slightly strained neck readily prevents sleep, and is likely not only to lead to a disturbed night but to a morning headache in addition. Still, it is a fact that

some people sleep much more soundly and comfortably with head raised quite 8 or 10 inches; but to secure this there should be at least three pillows so that there is a gradual raising of the shoulders and upper part of the body, which are thus kept in correct alignment with the head. The pillows should, therefore, be so packed as to provide not a sudden step at the head end of the bed, but a gentle slope upwards.

The ventilation of the bedroom is important because even if lack of fresh air does not prevent sleep the body will none the less suffer in other ways, and the head will very likely be heavy and dull instead of wakeful and bright when the tea comes round in the morning. At the same time the temperature in the bedroom should not be allowed to fall too low, especially where rather delicate persons are concerned. One has to find a happy medium between a hot, stuffy bedroom and a chilly, over-breezy atmosphere. Certainly the bed should be out of the draught, so that the window can be well open, and an endeavour made to keep a temperature of at least 55° F. at night except where the sturdiest and sleepiest are concerned. It is chiefly in winter-time that a poor circulation leads to insomnia; and then the hot-water bottle may come into use as a very helpful sedative. On the other hand, it is better to sleep between blankets, or to retain some undergarments than to rely too much on a hot-water bottle. What

is required for chilly mortals is a warm surface glow all over their bodies, and not merely local warmth here or there.

As to internal disturbances, an empty stomach is more likely to prevent the onset of sleep than too heavy a load : where there has been too hearty a consumption of food in the late evening, it is far more likely to disturb the sleeper after a heavy, torpid slumber of an hour or two, and then to torment him with fitful rest and dreadful nightmares thereafter, than to prevent him going off in the first instance. I am entirely in favour of a light and early evening meal for the forties and fifties rather than a heavy dinner, and consider it no disadvantage if there is a real emptiness at bedtime : for that is readily remedied, and a glass of warm milk and water, a little clear soup, or even a tumbler of hot water, will suffice to give that warmth and support which turns the scale in favour of sound sleep.

Insomnia and Indigestion

Turning now to the other type of insomnia—that in which the sleeper wakes after a few hours' sleep, often with a start and sense of dread, only to find that he cannot get comfortably off to sleep again, one finds that the cause of the trouble is nearly always somewhere in the digestive apparatus. Either, as just noted, the stomach is overloaded

at bedtime, and in its irritation thoroughly disturbs the whole system, or having succeeded partly in its hard task of digestion, it then passes on a mass of half-digested food into the next part of the digestive tube—the small intestine. This latter event is perhaps the most common and leads to discomfort and wakefulness about 3 a.m.

Sometimes the victim of this "delayed indigestion" calls out as he wakes, and finds himself faint and ill with cold perspiration covering his skin. This is a common form of disturbance not difficult to recognize, but inasmuch as it is dependent usually on a considerable and persistent disturbance of digestion, discussion of its alleviation does not come within the scope of this section on sleep and insomnia. Similarly with an overloaded bowel.

Constipation is a common—although often unrecognized—source of disturbed sleep in middle aged persons, and the cure of the insomnia thus occasioned is, of course, to be found in the cure of the bowel disorder responsible for it. With all these irregularities of stomach and intestines the evil results are due not only to the irritations set up by undigested or unsuitable food substances, but to the poisonings resulting from the formation and absorption of noxious compounds formed by the processes of fermentation and germ-action. The bad sleeper who says that he wakes with a furred tongue, headache, heaviness, and aching of

limbs, and with an unpleasant taste in his mouth, is always the victim of a poisoning from some part of the digestive tract that will go on undermining health if it is not corrected.

Sleeplessness, then, depends on a variety of causes, and in the individual the exact nature of these has to be sought before relief can be given. Many of these causes are not beyond the reach of average common sense, and as has been shown a number of simple domestic and hygienic measures may be invoked to bring back sleep. But in every case there must be no panic : to give way to anxiety about the broken sleep is the worst way to mend it. Sleeplessness is never dangerous unless accompanied by certain other disturbances of health that will inevitably lead to medical advice being sought apart from its special discomforts. And so let it be a rule not *even to think of* a sedative or "sleeping draught" except as a very last resort, and then only under expert guidance.

It is much better to put up with some really bad nights for a time than immediately to rush off to the chemist for a palliative. On the other hand, if a sedative is advised by the doctor then let it be taken in full confidence and without argument or fear that it may do harm. Confidence in self and trust in those called in to help are the only safe watchwords in combating insomnia, especially in highly strung and constitutionally fearful persons.

CHAPTER VI

EXERCISE AND FRESH AIR

Man made for Life in the Open—Advantages of Sunlight and Fresh Air—Effects of Muscular Exercise reviewed—Activity Good for the Heart—How the Heart improves when Systematic Exercise is taken—Blue Brains and Blue Fingers—On Breathing Good Air—Deep Breathing—Exercise and Digestion—Bad Sunday Habits—Walking—A Splendid and Ever-ready Form of Exercise—Common Hindrances to Regular Walking—Varicose Veins—Flat-foot—In Praise of Walking.

THE problem of middle age being mainly how to keep the tissues young and get rid of poisons, it follows that the key to a successful issue out of common difficulties is to be found in an active open-air life: it being understood, of course, that over-feeding and unwise use of stimulants are at the same time eliminated.

Man was made for life in the open; he was not built and will probably never successfully adapt himself to the cooped-up life that has to be led by the vast majority of workers in civilized countries to-day. The remarkable benefits that follow from light and fresh air alone in the case of consumption ought long ago to have led to a much more thorough

development of treatment on similar lines for all sorts and conditions of illness.

I am not now referring to the ruthless exposure of tuberculous patients to the elements that was at one time practised—and, indeed, may be practised now in some sanatoria for all I know—but to the general principle of open-air methods. Every medical man knows that the fresh air of the country-side or by the sea is enormously helpful in enabling the blood and tissues to fight infections and nervous diseases: knows that all other kinds of treatment are vastly assisted by an ample supply of oxygen, and yet through force of circumstances which seem too strong for us we still treat countless thousands of sufferers in hospitals, clinics and nursing homes well set in the centre of the dingiest and least aerated districts of our towns and cities. Yet the time will surely come when it will be a recognized essential in the treatment of all forms of obstinate illness to secure all the SUNLIGHT and FRESH AIR that we possibly can.

Those of middle age who feel unfitness increasing day by day may well take this to heart and secure the vital amount of light and air that make for health and fitness: to which they will thereby add, once they have appreciated all the implications of their position, such regular exercise as will enable them to get the best out of later life.

A review of the main effects of active exercise on the system generally shows at once what a great

difference there is between the workings of the brain and body in the sedentary individual as compared with the vital activities of the man who takes plenty of exercise. Take, for example, the ten most telling results of muscular activity: all of great importance to the business man or other indoor workers. These are:

1. Strengthening of the heart's action.
2. Improvement of the circulation.
3. Deepening of the breathing.
4. Increased health of nose, throat and air passages.
5. Improvement of digestion.
6. Stronger action of the alimentary canal generally: (in more popular language, "The liver is stirred up").
7. Muscles and joints are braced up.
8. Better action of the skin.
9. The eyes are rested.
10. The mind is refreshed.

Strengthening the Heart

That systematic exercise of a reasonable kind directly strengthens the heart is a fact that cannot be too much appreciated by men and women in middle life. There is, indeed, a widespread timidity about making the heart do a little extra work, and the bugbear of "overstrain" prevents many from taking anything like enough exercise; but the converse, namely, that to take a good walk daily or

cycle regularly is *good for the heart* is a thing one never hears stated as a definite proposition of life and hygiene. The heart is not entirely a mystery-organ: wonderful as is the initiation and maintenance of its beat and ignorant as we may be about some points in its physiology, nevertheless we do know that it is in effect a strong muscular bag and has in this respect the characters of any other muscle or group of muscles elsewhere in the body. And it is a familiar happening that muscles soon become flabby if they are not exercised. One has only to remember how the "flesh wastes" in the region of a sprained ankle, for example, to call up a picture of muscular flabbiness following a part being put out of action. The spindle-like legs of anyone who gets up after some weeks in bed, the thinning of a limb which has been kept in splints for a time and not rubbed, are other and not unfamiliar examples of enfeeblement brought about by want of use. It is the same with that muscular organ the heart: the less work we give it to do the less it feels inclined for, whilst it will quickly respond by firmer beat and better action altogether to regular daily exercise, particularly when such exercise is taken in stimulating fresh air and sunlight. But let nothing I have said lead to yet another bugbear: let it not be thought that the sedentary man's heart will stop work altogether if he pursues his airless and dull way of life. Not at all: hearts do not stop except for some very grave

reason. Even when pierced by a bullet and severely handled in an operation to remove the offending missile hearts do not necessarily stop : on the contrary, when a heart has stopped owing to the over-action of chloroform or other anæsthetic, it can sometimes be " made to go " again by giving it a hard pummelling.

The average heart is certainly not an organ to be afraid of, in spite of popular fears and anxieties about it ; but it does resent unfair treatment, and although certainly not likely to go off duty altogether because its owner persists in sitting all day and part of the night at his desk, or in an armchair, it may possibly remind him of its liking for exercise by making him a little short of breath when he runs for a train or hurries upstairs. It may even palpitate a little at times : that is to say beat in such a jumpy way as to call attention to itself and perhaps cause some alarm. Many a man suddenly awakens to the possibilities of heart trouble and becomes unduly anxious through experiencing some such sensation : he is certainly not, in the big majority of instances, a victim of heart disease. Many a middle-aged person suddenly reminded of the heart's existence by a thumping, and then of " missing " a beat, or some such variety of palpitation, is in need of nothing more than a healthier mode of life, with a cleaner " liver " and more exercise. And let it be noted in passing that time and again the neglected heart—neglected in the

sense that it has not been properly exercised for weeks or months—would not give a sign of its undoubted flabbiness were it not for the added discomforts of a disturbed stomach, likewise the result of indigestion, again due to a faulty way of life. Over-eating in proportion to the exercise taken occasions disturbances that send miserable scared persons to their doctors, to be told that their cure is to be found in a rational dietary and hygiene. Prepared for something terrible in the way of diagnosis and drastic in the matter of treatment, they are told to wash in Jordan, and are wise if they hasten to do so.

Let any flabby man in middle life who finds himself short of breath on going upstairs, and who is accustomed to quite insufficient exercise and a regularity of substantial meals, take to daily walking, and he will be astonished how by a careful system of graduation he will within a few weeks be able to walk four or five miles without discomfort. He must begin slowly. Little by little increasing his round, his heart will soon respond in a way that is gratifying to himself and enormously beneficial to every organ in his body; for there is nothing so depressing as a sluggish circulation. Clearly, if the main pump of the circulatory plant be working poorly, the vital stream will slacken so much in the furthermost parts of the living machine, that cold hands and feet, poor digestion and so forth will result from this cause alone. At the same time

"blue brains" often go with "blue fingers": this somewhat quaint idea was originated by that great and wise physician, the late Sir James Goodhart, who suggested that a sluggish circulation, failing to supply the brain with plenty of pure blood, is often responsible for sleeplessness, headache, depression and sense of unfitness. Doubtless, brains do not go blue, however little exercise we take; but it is true enough that want of exercise, staying too long indoors and general sluggishness readily produce a "fit of the blues."

Not only does the heart itself benefit greatly from exercise, but the blood-vessels themselves become healthier and maintain their elasticity longer in those who lead active lives. And so it is that the whole apparatus of the circulation, the function of which is to refresh and feed every cell in the body through the medium of the blood, is immensely benefited by regular exercise and in ways that are readily demonstrable.

The rule is, then:

Use your muscles and you strengthen your heart.

Deep Breathing

Then as to the deepening of respiration and improved health of chest, throat and nose that invariably accompanies more systematic exercise, it is found that the mere call for a little more energy is at once followed by a steadier rhythm of breath-

ing. Most town dwellers, business men, students, indoor workers and women as a whole do not breathe deeply enough: the result is that the important work of the lungs in purifying the blood is carried on much less energetically than it should be, and the vital processes of the system generally lose by so much in consequence. An ample flow of good fresh air into the lungs greatly favours health, and in middle life particularly helps in maintaining that youthful elasticity of the tissues that is one of the chief secrets of fitness and longevity. Not only so, but as proved by careful laboratory experiments—for example, those carried out at the London hospitals—clean cool air in steady streams tones up the delicate lining membrane of nose, throat and air passages to the end that they are better able to overcome the germs of catarrh, influenza and tuberculosis. This is, of course, the converse of the familiar fact that a congested slack condition in the nose and throat—such as follows from working in stuffy, over-heated rooms—lays us open to the attacks of these same microbes.

The rule, then, is:

When taking exercise, be sure to breathe deeply, for by so doing you strengthen your vital defences against colds, influenza and consumption.

On the stomach and alimentary canal generally the effect of increased exercise and more fresh air is always considerable, and often quite remarkable; many a case of so-called "obstinate constipation"

or "atonic dyspepsia" clears up when attention is paid to the calls of the body for more activity and a healthier atmosphere. In a word, the whole of the digestive tract shares in the general stimulation of health that follows a more complete aeration of the blood and improvement in the circulation. Hence it is that a few days out in the open will often work an effective cure for a sluggish liver sooner than any pill. Again it is largely a question of improved muscular health: the whole digestive tube (or alimentary canal) is an arrangement of muscle tissue and depends for its efficient action in passing on the food taken to the active contractions of its muscular coats. The churning up of the food so as to mix it thoroughly with the digestive juices; the passage of the products of digestion along those sections of the bowel which are mostly concerned with the absorption of the nutriment contained therein, and the final expulsion of undigested and rejected material—all these depend on firm muscular action which occurs in waves, driving the gastric and intestinal contents from one end to the other of the many feet of tubing which make up the digestive or alimentary canal. Moreover, this mechanical action is in health much assisted by the firmness of the abdominal muscles, and is hindered to greater or less extent when the abdomen becomes flabby and protuberant, as so often happens in middle-aged people leading inactive lives. Systematic exercise quickly reacts on the muscles of the

abdominal wall—particularly where support is given by wearing a well-made, wide abdominal belt—and this greatly helps the stomach and bowels to do their work properly.

The rule here is, then :

In taking exercise, provide for the better development of your abdominal muscles : thus you will help digestion and the elimination of waste matters from the system.

When a man or woman of forty-five or older finds that hard exercise is followed by discomforts of breathing or digestion, it is usually a matter of unfitness due to irregularity in the exercise taken and not to the exertion itself. The popular custom of taking the week's exercise in one great bout of activity spread over Saturday afternoon and Sunday morning is much to be deprecated. It is wrong in principle and in method. Some exercise every day, a special test of fitness on one particular day, and a day of rest, is the rule of health and fitness at all ages. We make Sunday a day of over-eating and over-exercising, whereas it should be a day of mental rest, light exercise and moderate feeding. That " Monday morning feeling " is not due to a reaction from pleasant recreation, as is commonly supposed: it is due either to tired muscles or a poisoned system, commonly to both. The one great good that comes to us from the institution of " Summer Time " is that it leads to regular daily exercise in the open air, and whatever disadvantages it may

have otherwise, this fact alone is enormously in favour of its being retained. With these errors in our way of life corrected, middle age will still keep enough of the buoyancy of youth for all ordinary purposes, and though as the half-century is scored in the birthday record there may be not quite the same springiness, there is—or should be—nevertheless a greater strength and robustness of the whole frame to compensate for its loss.

Walking

Walking is one good exercise that can be taken daily by every one not physically disabled from getting about.

The maximum for most middle-aged men and women engaged in indoor occupations should be five miles a day; two to three miles is a useful minimum for most of us.

By this I mean a definite walk at a steady pace. The condition is, indeed, fulfilled by many whose main occupation lies in cities but who live some little distance from their work, and those who get their evening and morning walk from some outlying station or omnibus terminus in country or suburbs are all the better provided for.

Thousands of men and women owe more to their morning walk to the station and their walk back again in the evening than they ever realize.

Walking being so important and so ready a form

of really beneficial exercise, it follows that all disabilities which prevent its being taken readily are doubly detrimental, and particularly so during the forties and fifties when regular exercise is essential to present health and future well-being.

Unfortunately there are some disabling conditions that come on in the middle of life, that is just at the time when they are particularly disadvantageous. These include rheumatism, gout, obesity, varicose veins and flat-foot. The first three named of these are discussed under separate and special sections, so can be left for the moment.

Varicose veins not only prevent proper exercise being taken, but are at the same time a nuisance and often a positive danger to life. Quite frequently they produce discomfort and a sense of fatigue out of all proportion to their size and extent.

In the early stages of this troublesome condition, the great thing is to keep the tissues as healthy as possible by toning them up daily with cold baths, or douches, followed by gentle massage for ten minutes. Such rubbing can be carried out by oneself and should be done, if possible, at the end of the day's work rather than in the early morning. *The sufferer from varicose veins should make a rule not to stand for a moment longer than is absolutely necessary each day.* For example, he should sit down whilst dressing and shaving. Then again much good can be obtained from the use of suitable elastic bandages, carefully put on and adjusted each morn-

ing. Sometimes the elastic stocking has to be ordered, but my own view is that as a rule the bandage is better than the stocking, and this largely because its pressure can be well regulated each day.

Of course, common sense tells us to see to it that there is no obstruction to the flow of blood *upwards*. But it is not everybody who has attended a first-aid class, or believes in elementary physiology. Hence many do not realize that the flow of blood in the veins of the leg is *always upwards*, and that corsets, garters, and other tight-fitting apparel easily obstruct the free flow in them—varicose veins are so thin-walled and collapsible—and therefore must be carefully adjusted.

It is very unfortunate when varicose veins get worse and worse in spite of all care and local treatment. The thing is not to let them get too bad before the question of having them removed altogether comes up for discussion. Many a victim of varicose veins conceals his trouble far too long, instead of taking his doctor into his confidence at an early stage. Dislike of operation—a very natural dislike, it must be confessed—is partly responsible for this. But to let these unruly veins go on growing, instead of seeking expert aid to keep them in order, is to court operation sooner or later.

However that may be, the fact remains that we are better without varicose veins, and if our general health is such as to lead a competent surgeon to advise their removal, then it is best to assume the

best face possible and put up with the discomforts of being anæsthetized and the boredom of three weeks or so in bed.

Before leaving this subject, which is really a very important one for all middle-aged persons, I must refer to the bogey of vein-bursting that worries many who have varicose veins. It is true that sometimes a swollen vein does give way, but it is equally true that this is *no cause for great danger provided there is no panic*. Follow a simple rule of first-aid and all will be well. Whenever sudden hæmorrhage occurs from a varicose vein, lie down, raise the affected limb, and get some one to press on the bleeding spot with a folded handkerchief.

Quite light pressure will always stop bleeding from a varicose vein, provided it is right over the point from which the blood is coming.

Avoid alarm, rushing about, brandy, and wild cries for a doctor. Appearances are here deceptive. Sudden bleeding is always horrible and alarming, but in this instance there is no great pressure behind it, and it can easily be stopped and controlled until the doctor comes.

Flat-foot

Walking becomes difficult when the arch of the foot gives way. It is such giving way that results in "flat-foot."

But whilst well-developed "flat-foot" is obvious

to the experienced sight and proclaims itself loudly by the pain, lameness, general fatigue and other disabilities which it occasions, *slight giving way of the arch of the foot cripples thousands who do not realize what is the cause of their discomfort.* Tight boots, rheumatism, neuritis, gout, a sprain and so forth are frequently blamed for a distressing pain in the feet or tenderness on walking that is really due to some relaxation of the muscles and ligaments holding up the arch of the foot, a slackening of which causes severe symptoms long before there is any obvious flattening of the instep.

Nor are the troubles due to weakening of the foot always entirely local: such conditions as headache, giddiness and pain in the back are quite frequently due to incipient flat-foot, and when this is so will only disappear when the foot is properly supported.

In early stages much can be done to remedy weakness of the foot by appropriate exercises and attention to general health. The so-called "tip-toe" exercises are especially useful here: to carry them out one stands upright and then raises the body on tip-toe six, ten, twelve or twenty times as the case may be, repeating with each foot separately, and ultimately with both feet together. But there should be no undue fatigue or straining of the muscles.

Once an actual flattening of the instep has occurred there is nothing for it but to have the arch of the foot artificially supported by wearing a suitable sup-

port, of which several quite useful forms are sold. Just sufficient height should be given to the support to rest the foot comfortably. There should be no forcing up of the instep. This is a mistake that is commonly made, with the result that more pain and discomfort result than ever before. Further, two very important rules must be followed in regard to such supports :

1. They must be fitted in, or available for every pair of boots or shoes worn, including dancing shoes and bedroom slippers.
2. Under no circumstances should the weight of the body be rested on the feet *without the supports* for more than a few seconds. Far more harm may be done whilst dressing in the morning, for example, by neglect of this rule than can be remedied by the day's tip-toe exercises or the wearing of the supports subsequently.

Sir Hermann Weber, whose writings as a physician who had especially studied the problems of age, have already been referred to, was himself a great walker, and had evinced considerable enthusiasm for this form of exercise, which he referred to as "one of the prinicipal means for health and long life." In an interesting discussion of the beneficial results of taking regular daily walks he wrote : "Many persons, including men of literary occupations, even medical men, and many women, think that walking exercise is quite unnecessary ; but

the great majority of those who hold this view and act on it suffer in later years from the neglect of this and other active exercises. The organization of man, the large lower extremities with which he is provided, show that they are destined for active use. The *amount of walking* necessary and useful to maintain health varies widely in different persons and even in the same persons under different circumstances. . . . The amount which is useful and possible must be judged by the condition of the individual at the time being and the effect produced. *It ought not to be extended to the feeling of distress*, a rule which holds good for all forms of exercise. We cannot insist too much on this point." It would be difficult to express more clearly the main points about walking as an aid to health.

The same observer very shrewdly observed the importance of walking with zest and keenness; walking properly suggests energy and capacity to the walker, slouching suggests depression and illness. "There is a great difference in the manner of walking. Some persons walk with a firm step, well-contracted muscles and perfectly erect; others walk with a slack step, loosened or half-bent knees and a kind of stoop . . . walking and standing with well-contracted muscles has a much more beneficial influence on the nutrition of the muscles, on metabolism, and general health, and ought therefore to be made a habit."

Sir Hermann Weber also collected a number of

instances of well-known men who have favoured walking noting that this exercises a most beneficial influence on the *mind* and the *mental faculties*. Thus: "Leslie Stephen, himself a great walker, says that most men of letters have been enthusiastic walkers. *Swift*, he thinks, was perhaps the first man to show a full appreciation of the moral and physical advantages of walking, and Leslie Stephen attributes to *Wesley's* love for fresh air exercise some of the spirit in his sermons. *Thomas Hobbes*, the philosopher (1588 to 1679), regarded walking and other physical exercises as the best means for health and longevity. *Fielding* shows by one of his heroes, Parson Adams, that he was an admirer of walking exercise. *Wordsworth* was a great walker, and his walks in beautiful scenery probably have inspired many of his poems. So were Sir Walter Scott, Coleridge, Carlyle, Gladstone, and many others who owed to their love of walking much of their vigorous naturalism." But this splendid exponent of the doctrine of health and activity in advanced years was not content with walking only; a great climber himself, he advocated running as an aid to health as years mounted up. "It is beneficial to many people with a sound heart occasionally to run, especially down hill, since by the act of running some sets of muscles are put into action which by mere walking are only slightly used; all the abdominal organs are shaken by it, and the circulation in the whole body is much accelerated. Old persons are mostly forbidden to run; but this,

again, is a rule which admits of numerous exceptions. We ought certainly not to advise aged people who have had no run for many months or years to begin with a rapid run of five minutes, or a run for a train; but by commencing with a gentle run of one or two minutes they can, if their organs are sound, gradually increase the time and pace with great advantage."

CHAPTER VII

OUR NATURAL DEFENCES

Keeping Ill-health at Bay—Essential Rules of Health and Hygiene—Nature Works in Favour of the Middle-Aged—Man v. the Germ—A Never-ending Contest—Illustrations—How Germs Attack us—How the Body Meets these Assaults—The Thyroid Gland—Some Safe Self-help Rules.

IT comes to this, then, that the great secret of keeping fit in middle life is to preserve those natural defences which have been set up within us, and which in themselves are quite strong enough to protect us from early breakdown if we are reasonably careful. Most of the troubles of middle age come from a wrong ordering of life; the anxieties of business, the calls of professional work, the demands of domesticity, and the general rush and tumble of life as lived in large civilized communities to-day make it difficult for us to obey systematically just those simple rules of living which make all the difference between health and unfitness. To keep the system well cleansed so that poisons do not accumulate—to exercise the muscles and heart so that an active circulation keeps every

corner of the body well supplied with nourishment and oxygen—to give the throat and chest the great benefits of fresh air for several hours a day—to rest the brain at night and secure sound sleep when the day's work is done—all these things seem simple enough, and yet the busy man or woman of to-day finds it hard enough to realize them practically. Yet in middle life there must be no looking back from the ideal of systematic daily exercise, plenty of fresh air, a calm mind, sound digestion, and a good night's rest. If we give up striving for these foundations of health then our powers will surely fail far more quickly than otherwise; when we strive to achieve them then in any case we shall certainly make some headway in the fight against early breakdown. In the years before us there is surely the promise of a greater restfulness, and a less severe wear and tear in life than we have experienced since 1914; there is every possibility that the middle-aged man and woman of to-day and of the next decade will be able to obtain a surer measure of health and vitality than has been the case with so many of their immediate predecessors who have felt the strain and stress of the war years, and those immediately after, to an extent that only doctors fully realize.

In the matter of health every one can take great hope from the vigour and persistency of the natural forces always working within us for our physical good; middle age may not be the period of the

greatest elasticity, but throughout the years from forty to sixty—often for some time longer—the natural powers of recuperation and vitality are as strong as ever. Let every one remember then that whatever illness or breakdown threatens, the inherent forces of the body are at once set in motion to work in the direction of cure; that whatever we do for ourselves, or whatever the doctor does for us, is being supported and helped by immensely powerful and natural forces. As to the exact nature of these recuperative processes, discussion thereof is far beyond the scope of this little book; let it suffice that there is this inherent vitality within us, and that it maintains its vigour in the face of all sorts of disturbances. That, indeed, nothing short of a knock-out blow is likely to lessen its activity. There is this to be said, that it is something to do with the inherent process of Life itself, and it is bound up with the deepest secrets of Man's essential Nature. Wherever the Real Man comes from, thence brings he with him the great gift of vitality making always for health: not always able to overcome the disorders or disabilities of his physical frame perhaps, but nevertheless always working in our favour. And always working to manifest the perfection of that Infinite Spirit which is the source of all Life and of all Health. That in its daily manifestations our inherent vitality is largely bound up with the activity of mind is a truism to-day; every one

knows that an important part is played by processes of suggestion and self-suggestion in the maintenance of health and in the weakening or strengthening of our natural defences. It is no longer strange to the general reader to be told how far mysterious processes of subconscious thought are constantly influencing us in health, or to ponder upon the remarkable advances that are being made by various schools of applied psychology which are devising fresh methods of attacking disease and benefiting health through powers of mind and spirit.

Man versus the Germ

On the physical side unfitness in middle age results itself sooner or later into a problem of poisoning in most cases. The unfit man of forty-five is nearly always a poisoned man; the thin, sleepless individual of fifty-five who complains of indigestion and rheumatism, and who feels life's fires flagging far too quickly, is almost certainly likewise a poisoned man. Much ill-health results from persistent poisoning, and this poisoning is invariably due to the action of germs. It is not our tissues themselves that produce the various substances that thus poison us, but it is microbes of various kinds which succeed in getting a foothold in the body of unfit people and setting up a series of poison factories there. The unfit flabby person

of middle age—man or woman—is a ready prey for hosts of germs that lie in wait for us, not only in the atmosphere we breathe, in the water we drink, and in the food we eat, but in such favourite hiding-places as our noses and throats. Without this action of microbes the poisons which occasion serious illness would be almost negligible in practical life ; as it is, the problem of poisoning due to hidden germ-action is the problem of health and fitness for nearly every one over forty. It is not the germs of specific diseases such as the microbes of pneumonia, influenza, typhoid fever, and so forth that are mostly to blame for their poisonings of the human race, although the toll they take is a heavy one : it is a host of nameless germs whose characteristics for the most part still elude our watchful bacteriologists, and which work steadily in the dark, which are the real scourge of the middle aged to-day. The germs of specific fevers and definite illnesses may slay their tens of thousands, but those that work away unseen and unsuspected in our noses, in our tonsils, and particularly in our stomachs and intestines, destroy their hundreds of thousands. In a word, the great struggle of middle life is between the human system that has lost something of its elasticity, but not necessarily of its vitality, and germs that take advantage of the flagging health engendered by over-work, worry, sedentary life, and want of fresh air, to attack our tissues. In this struggle it is the hard-worked professional and

business man, the clerk, the shop-assistant, the typist, and other indoor workers, who are most severely handicapped by those conditions which are inevitable in the competitive life and struggle for existence which is such a striking feature of present-day civilization.

Some understanding of just what happens in this persistent contest between Man and the Germ is essential to the carrying out of many measures of common-sense hygiene that recommend themselves to doctors, for example. Here knowledge is certainly power to attack, withstand, and perhaps overcome successfully microbic action that is undermining health through the usual processes of poisoning. All germs produce their evil effects on us by the poisons which they manufacture in the course of their daily activities; but for this poison to harm us it is, of course, necessary that it should be absorbed into the blood-stream. Fortunately the tissues of the body as a whole have a power of keeping these poisons out: some parts, such as the tonsils, for example, having a particular aptitude for this work. When through exhaustion or chill, or want of food, or actual injury, the vitality and resistance of the tissues becomes lowered beyond a certain point, then they can no longer keep out either the germs or the poisons which they make; once this has happened the invaders have broken through our first line of defence, and the subsequent history of the individual to whom this

has occurred depends on the efficiency of his second line. This latter is found in the wonderful capacity certain corpuscles of the blood have for swarming to the part which has been attacked and producing anti-germ and anti-poison substances. In a word, once germs have reached our defences millions of special corpuscles (cells) hasten to fill the gap, and as a matter of fact usually succeed in doing so. Were this not the case the simplest germ attack would be fraught with fatal consequences ; without such a system of defence, germs would always have it their own way, and whether through tonsilitis, a cold in the head, or a pricked finger, we should be overwhelmed and poisoned to death at the slightest mischance of this kind. Under such circumstances a slight chill would be as dangerous as severe influenza ; colitis would be as dangerous as typhoid fever, and the human race would have perished miserably long ago, just as Mr. Wells's Martians who invaded us in years gone by perished from the attacks of microbes to which they were unused and against which they had developed no defences.

The common cold may serve us as an illustration of an acute fight between Man and Germ. Taking the case of the business man in fair health who goes to his work day by day, and takes little change or exercise, the time comes when his powers of resistance are lowered by exposure to cold or a period of over-fatigue. The germs of catarrh, the

common cold, and influenza, are always with us and find a happy hunting-ground in suburban railway carriages, omnibuses, and tram-cars; also they settle with great gusto and found healthy families in many an overheated, ill-ventilated, and dusty city office. The germs are there, the resistance which has kept them out has now failed, and they "get home" with alacrity; their victim goes home with a feeling of unfitness, slight headache, and a sore throat. Next day his temperature is high, his head worse, and his illness fully developed. He is the victim of an acute poisoning which has resulted in the usual symptoms of germ-poisoning, namely, pain in the head, shivering with fever, and general sense of being ill. At this stage the secondary defences of the body come into play. The special white corpuscles of the blood whose duty it is to come to the rescue swarm towards the lining membrane of throat and nose—the obvious points where the defences have been broken down—and within forty-eight hours or so they succeed in destroying the invading germs and neutralizing the poisons they have poured into the system. The massing of these forces and the manufacture of anti-poison and anti-germ ammunition at short notice seriously tries the constitution; hence although our unhappy business man has got over his cold he feels very wretched and depressed for some time to come. Indeed, he is in some respects in a worse position than he was before, because his

resources have been severely taxed, and during the period which must elapse before they can be recuperated—perhaps a week or perhaps much longer—he is largely at the mercy of any other foe that happens to come along. He is in the position of a State that has won a glorious victory over an enemy, but in so doing has depleted its resources so as to be unprepared to take on yet another war for the time being. In terms of health we see the results of this very plainly in those sad cases which occur every winter with unfailing regularity where unfit men and women who have neglected a cold or tried to "throw off" an attack of bronchial catarrh fall victims to pneumonia or tuberculosis just when they think they have pulled through. The surprise that is often expressed at the tragic occurrence of some such serious complication after what appeared to be a very slight illness shows a complete misunderstanding of the happenings in our lifelong combat against germs.

Turning now to the less acute forms of germ attacks, such as those which inevitably follow flabbiness of the alimentary canal and fermentation therein, we find the same system of attack and defence at work, only in a more long drawn out contest. The threatened invasion and the poisoning accompanying it is by no means less serious; for although it is not so clearly expressed by outward signs in many respects, it undermines health insidiously and the breaches in our defences are

so stealthily made that our reserve armies are not rushed to the weak spot with the activity which would occur if the attack were sharp and sudden.

The practical moral of all this is firstly that whenever there are indications (symptoms) that the first line of defence has given way, and that germs and their poisonings are upsetting the system, we must do everything in our power to help the second line of defence to hold good. To this end the keeping up of bodily strength, the avoidance of fatigue and cold, and of overworking the internal organs by too heavy meals, are essential points. In other words, the overworked or unfit man who finds himself the victim of a sudden feverish illness, whether it be cold or influenza or anything else, should do nothing so foolish as to try and throw it off; he should keep in a warm room, preferably in bed, do as little muscular or mental work as possible, take light meals, and generally lie low until his temperature comes down. On the other hand, when it is a question of slow poisoning from germ-action in the bowel, or such that in any case the source of it cannot be eradicated by local measures, he should make every endeavour to raise his general fitness and to increase his general vitality so as to improve his total defences as far as possible; he should do these things whilst following out such advice as he may receive as to how he can best check his ill-health at its origin.

The Thyroid Gland

It is at this point that we may well consider the important part played in keeping up health and fitness by a group of organs—"glands"—the workings of which have only become at all clear within recent years, and the very names of which are scarcely as yet familiar to the public; with this exception, that we are now in a position to understand what it is that the thyroid gland does to maintain the rhythm of vital activity and healthful harmony within the body. Indeed, preparations of that organ have been widely prescribed during the past ten years or so; the result being that to many people to-day the term "thyroid" is not unfamiliar. But the names of its fellow-workers in the human system—the "suprarenal capsules," "the pituitary body," the "parathyroid glands," for example—convey no particular meaning to the average general reader. To put the matter briefly, all these organs—comparatively small bodies as they are—exercise a profound influence on fitness, and many serious disturbances of health which used to puzzle medical men are now known to be due to faulty action of one or other of these so-called "endocrine glands." A not uncommon example of this is to be found in that troublesome and serious malady we call "exophthalmic goitre," which we now know is associated with great over-action of the thyroid gland.

The fact is that a man is as active—or as old—as his thyroid gland and its fellows; when these endocrine glands fail, health fails, and a striking parallel can be drawn between the signs of old age and the symptoms of thyroid failure. So close is this resemblance that a theory has been put forward that senility is really a disease due to progressive weakening of this gland. It is a practical point of importance that in certain instances of the administration of small amounts of the dried thyroid gland of animals a remarkable tonic and rejuvenating effect is produced: as many persons in the middle period of life suffer from deficient thyroid action—as may be recognized by definite signs now well known to doctors—there is little doubt but that this sort of medication will come more and more to the front as a means of restoring elasticity and youthful vigour to those who have begun to fail unduly early. Particularly will this endocrine treatment make headway when more has been discovered about the balancing action that occurs between the various members of the endocrine group. Already so astonishing have been the results of this treatment in some cases of premature breakdown that enthusiasts have been carried off their feet and made wild promises of what is in store for us. Not so long ago we had quite a "monkey gland" boom, but I have yet to learn that the elixir of life so long sought by philosophers of old can be expressed from the thyroid gland of

a monkey or of any other animal. Nevertheless, as an aid to the restoration of fitness in middle age this kind of treatment does hold a promise of great things to come, and even in the limited state of our knowledge of the glands indicated great things can be achieved already by the judicious use of extracts made from them.

Some Safe Self-help Rules

"When in doubt call in your doctor" is a safe rule for the nursery, and it is, indeed, an even safer rule for middle life, when it is so necessary to combat the beginnings of illness. After forty-five it is not quite so easy to throw off things as it is in earlier years, and after fifty-five the system is even less active in its reactions. Whether it be a "cold," a "feverish chill," sciatica, intestinal "stoppage," rheumatism, pain after food—or any other familiar malady of adult years—it is bad policy to rely on the "throwing off" process too long before getting help. Yet one does not want to be telephoning to the doctor immediately any pain or discomfort occurs or whenever slight feverishness and a sneezing fit betoken a chill, and there are many simple remedies and processes which are recognized as part and parcel of ordinary domestic routine; it is in reference to these that a little explanation and comment may well find place in a book on health in middle age. One finds in most house-

holds a certain knowledge of home first-aid and nursing which has been acquired in rather haphazard fashion, and without due understanding of how to make the best of many measures of invalid care that have the full approval of the medical fraternity: with better knowledge these may, and almost certainly will, greatly assist in combating a variety of minor maladies. They will also help to sustain strength in more serious illnesses before expert help can be obtained.

It is always a safe proceeding to rest when sickness appears to be imminent; and the best place in which to rest is bed. Particularly where there is shivering, headache, sore throat, or any other sign that all is not well with throat and chest, it is wise to go to bed and await developments. At the same time an aperient should be taken. Then, where the use of a clinical thermometer is understood, a record should be made of the body temperature. All this, of course, where the condition is such that an "attack" of some kind is anticipated. Whether it be a severe cold or chill, or whether an actual attack of influenza or some other infectious malady is about to develop, the victim thereof is working on the right lines and in the direction of safety by following out this simple plan. But apart from the question of aperients drugs should be avoided. Quinine, aspirin, camphor, paragoric, sal volatile, and so forth, are all popular and oft-used remedies. But the fact is that their use is fraught with far more

dangerous possibilities than the tyro ever understands; that so often they apparently do little harm is due to the luck of the individual concerned. There is, however, no reason why a simple antiseptic gargle such as sanitas, Condy's fluid, or glycerine of thymol—all readily obtainable—should not be used to purify the mouth and throat. Very often feelings of chilliness, fatigue, and the like, are due to a little poisoning from the stomach or bowel in some one who has been working too hard with insufficient rest, and without proper attention to his internal economy; where this is so the simple routine suggested will frequently effect a cure and bring back a sense of health and vitality within a couple of days. *But let it be a rule that where the temperature is found to be "up" to the extent of* 100° *for more than twenty-four hours there should be no delay in calling in the family doctor.* Untold harm and a hundred tragedies result from delay in seeking expert advice in the early stages of serious illness. In middle age no one can afford to take risks that may result in insidious germs getting a firm foothold in the system.

Apart from the question of acute attacks of illness there are many occasions when the hard-worked middle-aged man or woman runs down. Here the choice of safe remedies is small, although within the limits of rest, diet, and aperients are to be found sufficient measures to redress the balance time and again. Whether the doctor has to be called in or

not it is always a step in the right direction to empty the stomach and cleanse the bowel. Drastic purgatives are not to be indulged in frequently without special advice, but in the range of ordinary domestic remedies are those which would answer a variety of purposes. Let me utter a word of protest against the common habit of resorting to salts and salines as soon as help is required in this direction; where in middle age the individual is run down, particularly if suffering from overwork, there is commonly a slackness of the bowel wall which renders it incapable of responding as actively to saline aperients as is desirable; consequently there is frequently an inefficient response, with the result that a great deal of unpleasant disturbance occurs with disquieting gas production, and the last state of the individual is worse—and more "livery"—than the first. Let us rely rather on the good old-fashioned vegetable preparations; rhubarb, aloes, and senna were good enough for our forefathers and are good enough for us. To-day, indeed, we supplement them with cascara, which is a very useful remedy, and colocynth when a particularly strong action is required. As regards calomel, which appears to be used by many people in a most haphazard manner, the rule should be not to take it unless under medical advice. When it is, indeed, administered in the right way and at the right time it is often an extremely valuable remedy; it is also an extremely valuable intestinal disinfectant, but it should not be taken

unless it has in the first instance been prescribed by the doctor and its rationale explained. The same may be said of all mercurial aperients. Even that familiar combination of blue pill and black draught, which certainly has the power of turning despondency into joy time after time, or the simple grey powder given to children, should not be used habitually without proper advice. Anything one may say about this kind of safe domestic remedy would be incomplete without reference to liquid paraffin, which is taken in enormous quantities to-day. Certainly it is taken commonly without rhyme or reason and without proper understanding of what it should do and why it should be used. Nevertheless, it is such a simple and safe remedy that in spite of the foolish methods of its use it does a great deal of good and very little harm. Liquid paraffin should be regarded as a simple aid to bowel action and an intestinal germ-destroyer. Therefore it may be taken in small quantities—but not regarded as an active aperient in itself. Paraffin is also an excellent remedy, especially for children. But taken in the enormous doses—several tablespoonfuls a day, for example—that one so often hears about, it defeats its own ends and makes many a lazy bowel far lazier than it was at the outset. After all, it is difficult to find anything safer in its workings, more sure in its action, and more readily obtainable, than that dose of castor oil with which we first became acquainted in the

nursery and which we unwisely neglect in later life.

The question of aperients is closely connected with that of sickness and abdominal disturbance generally. Let the rule be not to practise domestic self-aid on any form of sickness that is more than of the most passing kind. The stomach does not throw back its food without due cause, and in middle age vomiting is often a useful sign which enables the doctor to take in hand at once a trouble that may be serious if neglected. Where sickness is accompanied by abdominal pain send for the doctor as soon as possible ; and if an attack of sickness and abdominal pain wakens its victim during the night, let the doctor be sent for there and then ; for in the end there will probably be occasioned less trouble and anxiety, whilst the patient's interests will be all the better safeguarded, than if this urgent call be postponed until daylight. Doctors do not like being called out unnecessarily at night, but every medical man will respond willingly to a summons of this kind.

A quiet mind and a good digestion are great aids to health ; with a clean colon and a clear conscience we can make a good fight against age or illness. But not only must we keep the temple of the body swept and garnished, but we must guard the portals through which evil spirits may enter in the form of microbes ; it is from without that come those poisonous enemies to well-being which undermine health at all ages, but which are particularly inimical to all who have

reached middle life. Many of the germs which so harass us undoubtedly gain entrance with our food, and the preventive medicine of the future will certainly insist on far more systematic methods of food preservation and preparation than we use to-day. It may be that we shall be forbidden to eat fresh fruit and vegetables where their immediate sanitary history will not bear the closest investigation ; their adventures before they reach our tables are not usually discussed for obvious reasons, but we should do better to face this problem boldly. Milk, again, is always an important subject for discussion when we come to talk of germs and germ attacks : a more careful generation will undoubtedly insist on greater safeguards to ourselves and to our little ones than custom at present prescribes. This and the question of foods exposed in shops to the impurities of every gust of wind that sweeps the dirty streets, as also the matter of clean handling in factories and warehouses, form topics calling for much comment. But this is not the place for their full discussion. The individual has to do the best he can to protect himself from infection under circumstances of living and convention that are very far from ideal, although still greatly advanced from what they were a generation ago. As it is, our best protection lies in keeping up the vitality of the body generally, and seeing to it that as few weak points as possible are permitted to exist in our local defences. Particularly is the health of the nose,

throat, and mouth of paramount importance in checking invading hosts: unhealthy states of the mucous (lining) membrane of these parts make it much easier for germs to get a foothold. The tonsils are natural "strong points" in our defences, but once overcome by infection they themselves often become foci of disease; once the active tissues comprising them have become worsted by virulent germs, the latter may make of the beaten organs a fortress of their own whence they can sally forth and attack other parts. Similarly with the teeth. Diseased gums and decayed teeth offer great chances to the enemy to poison, to attack, and to undermine our strength. Pyorrhœa is to-day known as a common type of insidious malady that deals its blows in the dark. All weak points of this kind require systematic attention if we are to make the most of our defences: in middle life such local troubles—persistent without occasioning much discomfort—are the source of countless breakdowns.

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